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## Steel Output and Steel Control

LAST year, the British steel industry broke all previous records with an output slightly more than the set maximum target of 15½ million tons, and at the present rate of increase it is probable that in 1950 steel production in this country will exceed 16 million tons. Special interest attaches to these figures in view of a recent report by the Economic Commission for Europe which estimates that current plans for European steel production are likely to result in a surplus of 8 million tons in 1953. This subject is dealt with in an article in *The Financial Times* of Saturday last. The writer of the article expresses the view that, although such estimates of potential surplus, and of the likely increase in European output to 70 million tons, should be treated with some reserve, the general shortage of steel is now over, and, consequently, there is no reason why, except in special cases, the system of steel rationing operating in this country should not end. The sheet and tinplate problem would be eased when the South Wales plant at Margam was in production. Opportunities of selling in the export market must be grasped without delay and at the same time it was important to remember that a large proportion of the home steel trade

was destined ultimately for the manufacture of goods for export. If the general steel allocation system was ended in reasonable time, there was little doubt that, with skilled selling, the home and export markets for steel could be expanded in line with increasing supplies. Exports were now at a high rate and demand was buoyant.

## British Transport Commission Legal Service

LAST year it was announced that the British Transport Commission was in consultation with its Executives as to the organisation of a legal service for the whole undertaking, and, as from May 2, Mr. M. H. B. Gilmour, previously Solicitor for the Western Region of British Railways (of whom a portrait and biography appeared in our June 3, 1949, issue) was appointed Chief Solicitor to the Commission. As from January 2, a legal service has been established to take over the duties hitherto performed by the Solicitor to each Region of the Railway Executive and by the Solicitors to the London Transport Executive, the Docks & Inland Waterways Executive and the Tilling Association, and generally to carry out the legal work of the Commission and all Executives, other than that which has been undertaken on behalf of certain of the Executives by private firms. The names of the principal officers of the legal service, and the location of their offices, are given in our Personal columns. Mr. H. L. Smedley retains his position as Legal Adviser & Solicitor to the Railway Executive, and Mr. G. W. Quick Smith continues to act as Secretary & Legal Adviser to the Road Haulage Executive.

## Economic Position of the Danish State Railways

DURING the war the Danish railways suffered severe damage as a result of the activities of the Danish Resistance Movement, and consequently the rolling stock position seriously deteriorated by 1945. According to a recent economic survey\* it is likely to be some years before the position becomes satisfactory despite the fact that locomotive and wagon builders are fully engaged on replacements.\* Consideration is now being given to a degree of rationalisation of the State railways and it is intended to supplant many goods trains in the rural areas with direct motor deliveries from provincial towns and to introduce mechanical handling of commodities. State railways showed a deficit of Kr. 47.4 million for the year 1948-49 as compared with a deficit of Kr. 25.5 million in the last operating year before the war. For the year ended March 31, 1947, privately owned railways, which serve mainly the rural areas and several of which have since been taken over, showed a surplus of Kr. 2.48 million. Private railways, which are private largely in name only, are experiencing considerable competition from road transport, and discussion is taking place regarding the possibility of taking over certain bus routes.

## Transport in Ulster Reviewed

THE Ulster Transport Authority, whose first annual report may be expected shortly, was formed 15 months ago, and despite considerable difficulties has accomplished a great deal in a short time. It took over the Northern Ireland Road Transport Board and the Belfast & County Down Railway on October 1, 1948, and the Northern Ireland Transport Tribunal on December 15, 1949, authorised the discontinuance of all services on the County Down line, except for the Bangor section. Since its formation the Authority has also taken over the Northern Counties Committee railway from the B.T.C. and has held discussions with regard to the future of the Great Northern Railway (Ireland). Commenting on the work of the transport undertaking during the past 15 months, the *Belfast News-Letter* states that, though there had been individual complaints about high fares and the inadequacy of services on some bus routes, there had been a readiness on the part of the Ulster Transport

\* "Denmark: Economic and Commercial Conditions." (Overseas Economic Surveys). By S. Simmonds, O.B.E. Published for the Board of Trade by H.M. Stationery Office. Price 2s.

Authority to consider and redress any of the legitimate grievances, which policy had helped considerably in winning the confidence of the public. Improvements had been effected and doubtless more would be made as the need for them was revealed by knowledge and experience.

### Tourist Board to be Reorganised

**W**ITHIN the next few months the British Tourist & Holidays Board and the Travel Association are expected to come to an agreement whereby the status of the Board will be clarified and a single body formed in which the Travel Association will be fully integrated. This information is given in a report\* by a Select Committee on Estimates which, while agreeing that there is a need for such a board, criticises its present structure as the cause of overlapping and wasteful spending, together with a tendency to use the Board as an extension of trade organisations rather than as a service for tourists. It would be regrettable if the goodwill built up by the Travel Association were to be lost or not fully used. The Travel Association, states the report, occupies an anomalous position in relation to the Tourist Board in that it disposes of five-sixths of the total expenditure and supplies only one-fifth of the total income. The report recommends an extension of the scheme whereby local authorities can have part of their contribution used to advertise local attractions, and that travel literature of the more expensive kind might be sold rather than given away.

### Temporary Cut in C.N.R. Services

**T**HE Canadian National Railways announced on December 28 that it might be necessary to cut passenger services over the whole system on January 9 to conserve coal. Mr. Donald Gordon, President of the company, said that coal reserves had been seriously depleted by the strike in U.S.A. mines, which was followed by short weeks in those mines. After reviewing any advantages resulting from the formula of the Interstate Commerce Commission calling for a 33½ per cent. reduction in passenger service on United States railways, it had been decided on the C.N.R. not to go below a 25 per cent. reduction at present. The principal supplier of coal in the Maritime Provinces had undertaken to supply an additional 20,000 tons of suitable locomotive fuel this month. The railway will be able to continue both a day and a night train service between Montreal and Halifax. The evening train from Montreal and the morning train from Halifax will be a combination of the sleeping cars of the "Ocean Limited" with the day coaches and other stock of the "Scotian." It will run on the "Scotian" timetable and the "Maritime Express" will continue on its present schedule. Meanwhile the company is continuing to take all suitable coal from the Maritimes, Alberta, or the U.S.A., and move it to the best advantage.

### Wagon Dumper for Construction Work

**A**BOUT 30 miles west of Pittsburgh the Pennsylvania Railroad is realigning some three miles of its Pittsburgh-Columbus section to eliminate a 40-m.p.h. speed restriction over a series of seven curves. The new line will have only four curves, the sharpest 2-deg. (43-ch. rad.), and 70-m.p.h. speeds will be allowed over it. Average daily traffic is 23 passenger and 56 freight trains, the line being triple. The main engineering work involved is a 3,000,000 cu. yd. fill with a 64-ft. 6-in. formation width, 1½ to 1 side slopes, and a maximum height of 40 ft. Granulated slag, a waste product of the steel industry, is being used to provide most of the fill, about 4,000 cu. yd. being received by rail, unloaded, and spread daily. This figure is achieved by using a revolving wagon dumper to discharge the material into a hopper, whence it is led to site in 13-cu. yd. Euclid dump lorries, and spread with bulldozers. The average time for loading one of these lorries is 20 sec. So far as we are aware, this is the first time a high-capacity wagon dumper, with specially-con-

structed inclined hump approach and run-off sidings and switchback trestle has been made use of for an ordinary construction job of this kind.

### Carrying Mails for Nothing

**I**N the U.S.A. passenger train services are run at a loss; the major proportion of the loss, however, is due, not to the facilities provided for the passengers themselves, but to what is known as "head-end" traffic, express parcels traffic, and mails. It is estimated that in 1948, out of an aggregate loss of \$550,000,000 on passenger operation, some \$370,000,000 was lost on express and mail handling. Even in 1944, when passenger service as a whole showed a profit of \$234,000,000, the head-end loss was over \$300,000,000. For three years the railways have been seeking an increase in mail rates, but, out of the 80 per cent. advance on pre-war rates that has been asked for, no more than 25 per cent. has been conceded as yet, and any further increase is being opposed strenuously by the U.S. Post Office, which itself is facing a deficit of some \$500,000,000 for the year ending June 30 next. The position has been made much worse by a recent increase in the permissible weight of parcels sent by parcels post from 11 to 70 lb. The injustice of the present position to the railways may be gauged by the fact that, owing to the introduction of the 40-hr. working week and increased wages, one railway finds that the cost of handling mail at stations alone is greater than its total mail revenue.

### Educating the Young Idea

**A**MERICAN railways are going to a good deal of trouble to make the younger generation railway-minded. Some railways have programmes of educational tours which throughout the year are patronised by thousands of children and young people; the Chesapeake & Ohio Railway carried 342 school parties during 1949, more than 12,000 taking part, and the same railway has organised a C. & O. club for those of 18 years of age and younger, which now has 17,500 members. Many companies run regular "behind-the-scenes" activities, conducting parties over the large stations, freight yards, locomotive depots, and other places of railway interest, where details of working are explained to them. Others conduct parties of children through their crack streamline trains, to give them an idea of the comfort and interest of modern travel. Again, the Central of Georgia has adopted the ingenious plan of giving parties of Columbus school-children a free ride in its "Man o' War" streamliner while the train is making one of its daily reversals on the triangle at that town, throwing in the highly popular service of free ice cream on the brief journey!

### Further Developments at Lincoln

**O**N January 10, at the invitation of the directors of Ruston & Hornsby Limited, representatives of the technical press visited the Lincoln works of the firm, where they had an opportunity of inspecting the new gas turbine which was described and illustrated in our issue of August 12, 1949. This turbine is installed in the power house of the Lincoln works and is now running as a permanent plant. Further development is in progress with a view to developing the gas turbine for use in the marine and railway fields. The firm has also, in collaboration with the British Thomson-Houston Co. Ltd., built a prototype diesel-electric shunting engine, believed to be the smallest of its class in this country, designed to meet the need for a medium-size diesel-electric shunter. Another recent development at Lincoln has been the completion of a modern foundry. This was opened on January 5 by Field-Marshal Sir William Slim, and has been designed for the production of light green and dry sand castings with an output of 250 tons a month. Work is in hand on the design of a foundry for producing the heavier types of castings, on the completion of which it is hoped that the whole of the foundry requirements will be produced more economically by using skilled labour to the best advantage.

\* "Fifteenth Report from the Select Committee on Estimates." Session 1948-49. H.M. Stationery Office. Price 2s.

### Side Tank Locomotives for India

TEN 4-6-4 side-tank locomotives have recently been completed at the works of the Vulcan Foundry Limited, Newton-le-Willows, to the order of the Indian Government. Six of these have been allocated to the Saurashtra Railways and four to the Bikaner State Railway. The design of the locomotives, further details of which are given elsewhere in this issue, incorporates the standard characteristics of metre-gauge locomotives on Indian railways, which are designed to negotiate a minimum curve of 337 ft. radius and have a maximum axleload of 11 tons. The cylinders have been provided with removable cast-iron barrel liners, and steam distribution is effected by 8-in. dia. piston valves actuated by Walschaerts valve gear. Grease lubrication has been provided for the connecting rod big ends, coupling rods, and bronze coupled axleboxes, while Skefco roller bearings are provided for the eccentric cranks. The front and hind bogies are of the side-bearer type, spring side controlled, with Timken roller bearing axleboxes, and are identical with the "YB" and "YC" class Indian Railways standard metre-gauge locomotives. The boiler has a Belpaire firebox with an inner firebox of steel and two arch tubes carry the firebrick arch; all rigid and flexible stays are of Longstrand steel. The locomotives are being shipped fully erected.

### The Railway Charges Hearing

THE hearing of the application by the British Transport Commission for an increase in railway rates and charges for merchandise before members of the Transport Tribunal, sitting at the Charges Consultative Committee, has thrown a good deal of light on the financial position of the Commission. At the outset it was shown that whereas for 1948 the Commission had a net revenue deficit of some £4½ million, the expected deficit for 1949 is estimated at some £21,000,000, and that at the present level of charges for the present year may be in the region of £30,000,000. Figures supplied by the Commission indicated that the deficit is accruing at the rate of £500,000 a week. The increase in charges sought is estimated to produce £28,000,000 of additional revenue in a full year.

It was made clear that, because the railways had been nationalised, there is no bottomless purse which can be drawn on to make good losses. Nor is there any practical justification for suggesting that losses of British transport should be met by subsidy. Counsel for the Commission, in fact, submitted that any proposal that the Government should subsidise the operation of the Commission was contrary to the provisions of the Transport Act, 1947, and would be *ultra vires* the Minister of Transport, who could be restrained from applying public money, without first obtaining the consent of Parliament in a way not laid down by the Act.

Whether the present time was best chosen for making an application for higher charges may be a matter for discussion, but it was emphasised before the Committee that sooner or later the Commission, under the terms of the Transport Act, has to make up the arrears which have accrued and, indeed, are still being incurred. It is no doubt sound in its judgment that it is legitimate to spread the actual making up of arrears over a period. As regards the current and increasing deficit, the view is held by the Commission that the words in the Act enjoining the Commission so to conduct its undertaking as to secure that its revenue is not less than sufficient for the meeting of charges properly chargeable to revenue, "taking one year with another," do not justify it in present financial circumstances in letting it go any further.

There is no doubt, and the British Transport Commission is well aware of it, that an increase in railway charges is undesirable if it can be avoided. On the other hand, the position in which the Commission has been placed, both in regard to the additional costs which it has had to face, and in the reductions in traffic, and the relatively small increases, as compared with those of costs, which have taken place in railway charges since before the war,

has been largely outside its own control. When the Transport Commission took over the railways there had recently been an over-all increase in charges to 55 per cent. above pre-war, but in 1948 passenger receipts were £13,000,000 below what had been expected. In 1949 they are estimated to be down at least another £9,000,000, and in the current year the indications are for a drop of a further £7,000,000; that is to say, a decline of £29,000,000 in passenger receipts in three years. There is a general agreement, too, that another overall increase in passenger fares would result in a further restriction in travelling. The re-introduction of cheap fares on a fairly limited scale has helped to keep up the numbers of travellers, and so to improve train loading, but they have not improved the revenue.

On the goods side there has been a shrinking in Government traffic alone of some £25,000,000. Broadly, the picture placed before the Committee was that 1949 yielded some £24,000,000 or only two-thirds the amount in 1948 from working results of principal activities, supplemented by £7,000,000 against £9,000,000 in the previous year from other income, a total of £31,000,000 against £45,000,000. Interest on Transport Stock and administration expenses required £52,000,000 against £50,000,000 for 1948, giving the deficit already mentioned of well over £20,000,000 as compared with nearly £5,000,000. For 1950 the deficit of £30,000,000 which is expected would be made up of the loss on railways of nearly £21,000,000, an estimated further decline in rail traffic of £5,000,000; further rises in costs after taking account of economies of £2,000,000, and reductions in contributions from other sources of about £2,000,000.

Among the principal bodies which are appearing before the Charges Consultative Committee, and which are producing arguments against the proposed increase in railway freights, are the National Coal Board, the British Electricity Authority, and the Gas Council. For the purpose of opposing this application these three nationalised industries find themselves allied with some of the most prominent advocates and practitioners of private enterprise. In the case of the Coal Board there is a strong element of irony in the position, for not only has a considerable proportion of the higher costs being borne by the railway arisen from the increased price and poorer quality of the coal consumed on railways: the Coal Board, like the other State utility undertakings, varies its charges without reference to a tribunal. Indeed, the first intimation of an increase in cost that the consumer has, often enough, is the receipt of a bill at the higher rate.

The question of charges in the London area was raised during the hearing, and it was made known that a scheme to equalise or smooth out anomalies which exist in the area under the jurisdiction of the London Transport Executive and also on the suburban lines was coming forward. The Chairman of the Committee was probably correct in his comment that to suggest that it might be brought into effect by October would be taking a very hopeful view, for a scheme of that kind, as also any general charges scheme for passengers, would be subject to the close scrutiny of the Transport Tribunal. The integration of road haulage, like that of road passenger transport, is far from complete, and in those cases any changes in the charges structure in all probability will have to await presentation of the charges schemes which are being prepared, but which are unlikely to be presented to the Transport Tribunal for at least another year, and probably longer.

There seems every likelihood that the hearing of the application will occupy several days next week, and may even have to be extended beyond that time. Whatever the outcome of the application may be, the industrial interests which will be mainly affected by any variation in railway charges will have had, and will have taken, full opportunity to put forward their views. The representations by these bodies have all to be considered by the Committee when it comes to tender its advice to the Minister as to the course which he shall adopt in regard to the application of the Commission.

That advice will have as its background the general national interest as well as the particular interest of national-



ised transport. The two things, indeed, are inseparable. Nor can it be overlooked that of the total business on any basis of the Commission, the railways represent about 70 per cent., a preponderance which is a clear indication of the vital part which they play in the economic life of the nation.

Moreover, with all that has been said before the Committee and elsewhere about relative efficiencies, it is worth noting that, although the railways in many cases have had to bear price increases of about 125 per cent. and have had to operate with their own charges increased to only 55 per cent. above pre-war, they have been able to operate so far with a relatively small percentage loss on net revenue in comparison with their total receipts. Wages, for example, are roughly two-thirds of total expenditure on the railways, and for all practical purposes are outside their control; wages show an increase of 103 per cent., and coal costs of over 175 per cent.

### "British Railways Magazine"

FROM time to time we have recorded the steps which were being taken by the Railway Executive to evolve a new magazine for British Railways. The first issue of *British Railways Magazine* has now been published. This journal does more than supersede the magazines which for so long were published by each of the four main-line railways, for it provides, in effect, new journals for the Scottish Region, and also separately for the Eastern and North Eastern Regions.

The problems which faced those responsible for the production of the new magazine were considerable. Under the organisation of British Railways as one entity, it was essential to have a common avenue of approach to railway staff throughout the system. On the other hand, British Railways for operational and other purposes, are divided into six Regions, and there is, therefore, a real need, which we are pleased to see has been appreciated in the new magazine, for dealing with regional news, practices, and so forth. The method by which this has been achieved is to produce a magazine which is predominantly Regional, but the first four pages of which are devoted to a broader—national—approach to the general aspirations and problems of British Railways.

In our last week's issue we gave some short extracts from the personal message with which Sir Eustace Missenden, as Chairman of the Railway Executive, opened the first page of the new magazine. He pointed out that each of the six Regions has its own edition, and that these will serve to preserve the tradition handed down through the old magazines, which since January 1, 1948, were carried on under their regional titles. On the other hand, it is also necessary for all railway staff to think in terms of British Railways as a whole, and it is impossible to attain unity of purpose unless all members of that staff are quite sure what that purpose really is. Therefore, the *British Railways Magazine* is designed so that it can explain from time to time what the Railway Executive is planning; keep the staff up to date with the latest railway developments; provide a means of exchanging information on Regional practices and problems; and act as a forum for news, views, and opinions on the present and future of the industry.

Each Regional edition also contains a message from the appropriate Chief Regional Officer. What may be termed the national pages are devoted to articles on such matters as the part that the railways play in the iron and steel industry, staff consultation, reviews of publications, an abstract of Sir Eustace Missenden's recent paper on railway motive power, and a diagram showing the latest railway traffic receipts. All that section, including the cover of the publication, is edited centrally from the Railway Executive headquarters in London. The rest of the issue is devoted to the Region covered by the edition, and is supplied by a regional editor.

It is noteworthy, and we think commendable, that as far as possible, many of the characteristics of the old magazines have been preserved, and in particular the lists of retirements and other changes in personnel are retained. These sections are always of great interest to past and

present railwaymen, and, indeed, with the present interchange of staffs between the Regions, may result in some members of the staff of British Railways subscribing to more than one Regional edition—that relating to their present Region and that relating to the Region from which they have been transferred—which, from the point of view of those who are seeking to achieve a broader concept for British railwaymen, would be all to the good.

The general layout of the new magazine is attractive, and it is well produced, particularly in view of the problems inevitably associated with the production of a magazine which has to be printed in several centres. The first issue is a commendable job, and we wish well to a new contemporary, the progress of which we shall watch with interest.

### Standardisation of Engineering Products

IN our November 26, 1948, issue, we referred to the appointment by the Ministry of Supply of a Committee, with Sir Ernest Lemon as its chairman, to consider the possibility of reducing the variety of products used in its engineering industry. In this report\* the Committee expresses the opinion that among the reasons for the wide, and often excessive, variety of engineering products which exists in this country are the long-established pattern of production based on methods in use before automatic machinery and bulk production techniques were developed, failure to appreciate the magnitude of the increase in productive efficiency which can result from a reduction in variety allied with the adoption of the latest technical equipment and methods, the misconception that standardisation and simplification tend to produce rigid uniformity and that technical development and progress is thereby retarded, and the fear that bulk production methods would damage the reputation for quality to which so many producers rightly attach great importance.

The re-equipment of many sections of British industry is considered necessary if production is to be made efficient. Two main difficulties in the way of re-equipment at the present time are stated to be: (a) the problem of finance which has been gravely increased by the rise in cost of capital equipment to some 2½ times the pre-war level. (In addition, the burden of taxation on undistributed profits, which are in general the main or only source of finance for re-equipment and development in industry, has had a similar effect. The increased allowances provided in the 1949 Finance Act are helpful in providing, in effect, for an immediate interest-free loan, but do not appreciably ease the long-term problem); (b) the great difficulty of securing prompt delivery and installation of up-to-date equipment and ancillary buildings and services.

In regard to home and export markets the Committee considers that there are, in general, three main interests in connection with the standardisation of engineering products, namely, the manufacturers, the users, and the national, as distinct from any sectional, interest; in some cases, the requirements of overseas customers were given as a major reason for the extension rather than the reduction of variety. To encourage overseas customers to accept items normally used in the United Kingdom the Committee considered it essential that, when simplified ranges or standards are determined, the acceptability of these products in the export markets should be borne in mind so that, if possible, such ranges may be equally suitable for use at home or overseas.

There was frequently a divergence between the railway signalling equipment used on home railways and that purchased by overseas customers—the latter taking the more modern equipment, and, while not commenting on the technical aspects involved, suggested that the purchaser and user industries concerned should give the fullest consideration to this and to other similar cases, to achieve the maximum standardisation between home and overseas requirements.

There were undoubtedly many products where the quality

\* "Report of the Committee for Standardisation of Engineering Products, 1949." H.M. Stationery Office. Price 9d.



required overseas differed from that required at home. Equally, numerous occasions arose where even in the home market demands existed for differing qualities, and, while there was much to be said for trying to evolve common standards to meet all requirements, more than one standard should be evolved, if a common standard would represent a low average quality. It was important not to lose, in an endeavour to secure general agreement, the value of quality. It was, indeed, a criticism of some B.S.I. standards that they tended to represent but a "common average"; were more than one standard to be issued, the higher as well as the average or lower requirements could be met in an appropriate manner.

The Committee expresses appreciation of the work which the Institution has carried out in the past, and which has been on an ever-increasing scale. Evidence it had examined showed that this country had in the past been second to none in the preparation of national standards; the Committee agreed that the B.S.I. was the appropriate body to co-ordinate the views of the various interests concerned in drawing up standards on a national basis, but considered that its staff and facilities must be strengthened and extended if it were to play its proper part in the work which now had to be handled. While good progress had been made by some sections of industry, the results achieved in other sections to evolve and use standards and simplified products were far from adequate: the Committee regards the methods by which industry proceeded in this matter, *i.e.*, by individual action or by voluntary agreement, as correct, and is convinced that the wider application of specialisation, simplification, and standardisation would best be achieved by voluntary action. In most cases effective standardisation must follow and could not precede proven and accepted practice.

The Committee is strongly averse to the idea of legal compulsion, and expresses the opinion that Government Departments, and the industries under public control, can play a major part in reducing unnecessary variety in relation to the equipment they purchase or produce; by doing so they would give a direct lead to general industry. They should, however, avoid the danger of unilateral action, and should proceed in full and early consultation with the manufacturers and, through the B.S.I., with other branches of user industry, whenever there is, or may be, joint interest; it is also recommended that it should be made normal practice in Government Departments, including the Services, and in the nationalised industries that purchases be to B.S.I. standards, where these exist and are appropriate for the requirement. If the relevant specification is not considered satisfactory for any reason, the matter should be referred to the B.S.I. for consideration, and action where desirable.

The biggest stimulus to the reduction of variety in production would come from manufacturers giving a proper price incentive to their customers to buy items in regular production, and price differentials normally quoted between the regular lines and articles which were produced in very limited quantities were often inadequate and usually did not reflect the real differences in the cost of production. Insufficient attention was given to the disproportionate displacement frequently caused by the production of items in small quantities and the special and often hidden overhead costs covered by them. Furthermore, dispersal of effort on these lines hindered endeavours to reduce costs on the regular products.

The view is expressed that the nationalisation of major undertakings such as the railways, and production of coal, electricity, and gas, can under proper direction give a very great impetus to simplification and standardisation. The industries now under public control were absorbing about 30 per cent. of that proportion of the United Kingdom production of engineering goods not exported. With the attention at present being given to the expansion and re-equipment of these industries it might be that the proportion of the United Kingdom output which they now absorbed was higher than it would be in the long run, but it was clear that these industries were always likely to take a very substantial share of the output of engineering pro-

ducts. If, then, the nationalised industries and other large public users could, working with the manufacturers and the B.S.I., agree as to simplification and appropriate standardisation for items which they purchased in substantial quantities—both those which were mainly special to their industries and those used in other industries—the effect should be to facilitate productive efficiency, resulting ultimately in lower prices and better delivery.

Although nationalisation provided opportunities for greater standardisation, serious dangers also existed. Were the nationalised industries to be unduly rigid and unwilling to co-operate with each other and with other users and manufacturers, a position of confusion could arise with various powerful organisations, each determining its own standards. It was essential to avoid this. The industries in question were primarily users rather than producers of engineering equipment and it was important that they should appreciate the difficulties as well as the possibilities of improvement on the production side.

The Committee emphasised that the nationalisation of these major undertakings presented an opportunity for ensuring that the re-equipment planned by one industry met the needs, particularly in the long term, of other industries whether nationalised or not; it refers, for example, to the possibility of using high-capacity bogie rail wagons of not less than 40-ton capacity, fitted with vacuum brakes, for coal and mineral traffic. The use of such large wagons had hitherto been hindered in part by the fact that the loading and unloading facilities at collieries, power stations, and industrial establishments had been designed for existing wagons and, in general, were too small for large wagons to be used. In the view of the Committee the opportunity now existed to work out broad dimensional standards for the loading, transport, and unloading equipment for heavy mineral traffic to enable high capacity wagons to be used in the future. A decision on the size of wagon which was to be the long range objective should be made, it was argued, so as to permit the public and private interests concerned to make their long range plans accordingly; it was particularly important to make such decisions now when so much development and rebuilding is in hand or projected.

This case, mentioned in some detail, was regarded by the Committee as an important, but typical, example of the benefits of properly co-ordinated standardisation; it has brought out strongly the need for co-operation between nationalised industries, and between them and private industry, and suggests that major savings would accrue to the "users" as well as to the Railway Executive. It was considered that the fixing of the leading dimensions and a maximum gross tonnage as standards would not prohibit improvement in the design of successive "standard" models.

Among the benefits which the Committee considers might accrue from action on these lines, would be reduced labour costs in loading and unloading, the possibility of running set trains between principal supply points and use, resulting in rapid turn-round and reduction in shunting costs, and an appreciable saving in railway track length required for standage.

The report does not disguise the magnitude of the task which confronts the nationalised industries, and cites as an example the former London Midland & Scottish Railway, where the various companies constituting that company were each buying goods to their own specifications, and as a result of standardisation and simplification of design, 230,000 items were selected in place of at least four times that number used previously. The standardising of these items occupied a committee continuously for three years. The amount of work involved is enormous, and one of the difficulties will be to provide suitable staff for the purpose; obviously if staff are withdrawn from their present duties, production must, to some extent suffer, the best solution would appear to be a dilution of existing staff with others entertained for the specific purpose of investigating the possible items which can be standardised; whatever policy is adopted, the change over to standardised production must necessarily take many years.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### The Future of the Rural Branch Line

December 23

SIR,—Perhaps Mr. Hawker, writing in your December 23 issue, and I were at cross purposes as to the ideal methods of working branches; I certainly agree with him except that perhaps the proposed signalling cut might be false economy. Despatching is already indulged in under various names and in various forms, supplemented by local signals. The electric token instruments give a flexibility that is almost essential if traffic is to be anything like what we hope it will be.

The type of railway officer he refers to must have existed long before signalling was developed to eliminate that very point. If a chance is likely to occur only "once in a blue moon" it can be dismissed as negligible, but then sometimes things have a habit of repeating themselves rather too often. To quote the experience of a friend: a certain train has not been known to arrive at Bristol on time for years. So long as it was not more than the usual ninety minutes late he caught a connection on. But when it came to two and two-and-a-half hours late he was twice stranded there for the night: he now goes by bus, arriving at the place he wants to get to on time, at half the cost, and without getting left at a place he has no wish to go anywhere near.

Yours faithfully,

COURTENAY BARRY

The Old Manor, Salisbury.

### Safe Shunting Speeds

January 2

SIR,—Considering the infinite amount of painstaking care lavished on safe working, so that the correct line of action in almost every conceivable contingency is laid down in the Rules, Regulations, and Appendix to the Working Timetable *pari-passu* with the principles to be adhered to so as to prevent such contingencies arising, it has often struck me as remarkable that our British Railways, almost alone of those in the world which might be termed progressive, have for so long tolerated loose-coupled goods trains.

The present policy of introducing more hybrid semi-braked trains does not appear to imply any radical change in outlook. I would, indeed, suggest that these hybrids, running at relatively higher speeds, may, even with the most careful judgment on the part of the driver, impart a greater snatch to the trailing wagons in rear of the fitted portion than does the more modestly tried loose-fitted variety. Ask a guard—he is best qualified to judge! No. 2's and No. 3's braked are certainly not popular with the train crews; and if the guard finds his sciatica gets tickled up by travelling on them, how about the goods loaded in the hinder wagons?

If a policy of fully fitting all classes of freight trains were decided on here and now, the full fruits would admittedly not be felt for a decade or two. Such fruits would consist primarily in a reduction in the number of claims for damage, and for loss through collisions and derailments resulting from breakaways; in increased track occupation as a result of the general raising in the level of speed; and in reduced hours for the loco. crews. The guard's actual journey time would, of course, be similarly decreased, but he would be booked on and off as now, so that the fitted trains could be prepared and broken up without any considerable increase in the present yard staffs—he would prepare his train, and possibly also assist in its disposal.

All this would be very well were it not for the matter of safe shunting, and that is why I find your short paragraph on the subject, in the issue for December 23, of considerable interest.

As Mr. Barriger points out, the only answer to this question—one of paramount importance is that some of

the principal advantages of working fully-braked trains might well be lost through careless shunting—is to educate the staff. But the first essential is to make them once again take an interest and pride in their particular job and in the industry for which they are working. Public confidence in the ability of the railways to deliver the great bulk of their traffic intact must be restored. This will not be done by staying as we are, nor do I think the continuous brake will provide much of an answer unless rough shunting can be greatly reduced.

I question your (or is it Mr. Barriger's) suggestion that rail brake equipment has any great bearing on the subject. It will admittedly reduce the likelihood of a runaway resulting from faulty brakes, or misunderstanding between the yard staff. But the rail brake is used only to check the wagon, which then regains speed down an ensuing and more gentle gradient so that it shall run well clear into the sorting sidings, and as far down them as may be required. The subsequent movement of the wagon is controlled by brakemen. He would be a skilful man indeed who could so operate a rail brake as to ensure that a wagon should strike its fellow at 2 m.p.h. or under! The running of wagons depends on the loads they carry, quite apart from the type of axlebox provided.

On the whole I incline to the view that the worst damage occurs in hump or gravitation yards, where the chasers have often to traverse a great number of roads between the passage of one shunt and the next. Runaways there are also more destructive in their effect. In this country the knuckle yard would appear to have much to commend it.

Yours faithfully,

ADAM OF USK

Llangattock Court, Crickhowell, Breconshire.

### 1948 Locomotive Exchanges

December 30

SIR,—I have read with interest in your issue dated December 23, the letter from Mr. A. J. Maxwell, of Newton Abbot.

All credit to that gentleman for voicing his opinion and saying what I imagine to be his feelings on the subject of the 1948 locomotive exchanges! There is no doubt that quite a number of people feel exactly the same way, and some have hinted at it in the technical press, but few have said it so bluntly, if I might put it that way.

Mr. Maxwell has, I feel sure, hit the right nail on the head in regard to the Southern Region Pacific locomotives. I have often wondered what would have been the result if they regularly had to take a "Royal Scot" out of Euston daily, under conditions and in the condition that the London Midland Pacifics are forced to do, and, after a rough trip, having to tackle, at nearly the end of the run with inferior fuel and a dirty fire, the Shap and Beattock banks.

I feel that on a wet and snowy night, with a heavy load, slipping would be their downfall. The same remarks, I imagine, would apply if they had to tackle the loads that the Pacifics of the former L.N.E.R. have to handle from Kings Cross.

I also heartily agree with Mr. Maxwell's remarks concerning the waste involved on using large engines on light passenger trains, especially as, as he says, we are now having to pay for it!

Concerning the late running of passenger trains, a high percentage is undoubtedly due to the lethargic way in which signalmen and, indeed, station staff go about their duties. I think regular travellers will agree that the foot-plate crews spend most of their time endeavouring to recover time lost by their colleagues.

I witnessed such a case only last week when a very heavy long-distance express heading for Euston was pulled up from full speed to almost a dead stand while the signalman allowed a couple of light engines to cross

the up and down main lines, the only reason being that the light engines were proceeding to the shed! The result was that the express involved and three behind it were all delayed.

The effect of the signalman's delay to the first train built up to such an extent that by the time the train for which I was waiting arrived it was some twenty minutes late—previous to this experience it was on time.

Yours faithfully,

H. W. FRANKLIN

Staniland, Radwell, Beds.

## A History of the Mushets

December 30, 1949

SIR,—Mr. Fred M. Osborn, Chairman of this company, is engaged on writing a history of the Mushets, that is, David Mushet (1772-1847) and Robert Forester Mushet (1811-1891), both distinguished metallurgists of their day, the former being the discoverer of the Blackband ironstone of Scotland and the latter, amongst other things, being associated with Sir Henry Bessemer in perfecting his process, and the discoverer of self- or air-hardening steel, the pioneer alloy steel. Mr. Osborn would be very grateful if any of your readers who have recollections of the Mushet era, that is from about 1860-1900, or who have documents covering this period, and bearing on the subject, would be good enough to write to him. It is believed that the Mushet family goes back to William the Conqueror's time, and any information about David Mushet's antecedents (he was born at Dalkeith in Scotland, his father being William Mushet, who married Margaret Cochrane), will be appreciated.

The present generation has little idea of the changes their fathers and grandfathers have seen, and Mr. Osborn feels that it is important to keep alive memories and contributions of the past upon which much of our present prosperity is founded.

Yours faithfully,

T. A. SEED,  
Publicity Manager

Samuel Osborn & Co. Ltd., Sheffield 3.

## Railway Fares

January 4

SIR,—I had hoped that the correspondence on this subject had ceased, for the time being, but Mr. Roberts's letter in your issue of December 30 contains so many extravagant statements that it cannot be allowed to pass unchallenged.

How delightfully simple is Mr. Roberts's solution to the problem of how to enable the B.T.C. to pay its way. It is only necessary, he says, for its administration to have "a few men with common sense and enterprise to capture all the traffics" (to rail). What is to happen to the Road Transport industry when all the traffic goes by rail, he does not say. Does Mr. Roberts seriously suggest that there are no men with these qualifications in the railway industry today and, if so, where does he suggest they be found—at St. Neots?

And is not Mr. Roberts rather hard on accountant, (who he apparently thinks run the railways at the present time) as he not only says they "know little or nothing of the actual working of the lines and their traffics" but accuses them of condoning "the running of excursions at heavy additional expense at half the ordinary fares"? (Incidentally, is not a large proportion of these "excursions" conveyed by specified ordinary trains, involving no additional expense?)

Apparently, Mr. Roberts is unaware that on the Railway Executive there are functional members for commercial and operating matters, respectively—both former railway officers of great experience—who have their "opposite numbers" at the Headquarters of the six Regions, and it is these officers (not the accountants) who decide what fares should be charged and what trains run.

It is, of course, impossible to say definitely "how many hundreds of millions of passengers now travel by road

who formerly all travelled by railway" but in 1948 the total volume of passenger travel (i.e., passenger miles) was approximately 2,000 million (not 2,000,000 as erroneously shown in my previous letter) more than in 1938, due to a large increase in long distance passengers, despite a large drop (134,000,000) in passenger journeys other than workmen and season ticket holders. From these figures it may reasonably be deduced that the transfer from rail to road between 1938 and 1948 was in the region of 200,000,000 short-distance journeys a year; assuming an average journey of 10 miles for these short-distance passengers, this would represent 2,000 million passenger-miles. If all these could be recovered to rail, the additional receipts at Mr. Roberts's figure of '66d. per mile would be about £5,500,000. As against this, the loss which would result by reducing the earnings per passenger-mile from 1'63d. (the 1948 figure) to '66d. per mile on the 15,248 million passenger-miles (excluding workmen and season ticket holders) operated in 1948 would amount to over £61,500,000; net loss £56,000,000.

Mr. Roberts need have no fear that I shall "drop down on him like a ton of bricks" on any other matters than passenger fares, as, of course, being an *ex-Accountant* I know little or nothing of railway working! But what little I do know is sufficient to enable me to realise that most of Mr. Roberts's "remedies" would entail such vast capital outlay and take so long to become effective, as to be quite outside the realms of practical politics at the present time.

Yours faithfully,

J. H. LAUNDY

Rustington, Sussex

## West Kent-Brighton Services

January 5

SIR,—Here is the sort of reason why British Railways are losing traffic. I am asked by a friend on leave to lunch with him at Brighton at 12 noon on Saturday. On other weekdays there is the 9.55 a.m. (slow enough) through train from Tonbridge to Brighton. On Saturdays one would have to catch the 10.30 a.m. from Tunbridge Wells West, but I have to go through and deal with my mail before leaving, and the Green Line coaches to Tunbridge Wells at that time are liable to be already full, and, anyhow, land one at the wrong end of Tunbridge Wells.

I studied the Southern Region timetables to see if I could do anything by bus to Oxted. There is a connection for Brighton at 11.16 a.m. from Horsted Keynes, but the only connection from Oxted leaves there at 8.59 a.m. and lands one at Horsted Keynes at 9.53 a.m. with over 80 minutes to wait there. I cannot afford the considerable extra cost of going up to London and down again on both journeys. Moreover, we have no good service to Victoria from Sevenoaks and Tonbridge, and no fast trains run from London Bridge to Brighton except at business hours. I cannot see my way to going to Brighton, and shall ask my friend if we can meet in London when he is going through.

Yours faithfully,

E. A. GURNEY-SMITH

Ormiston Hotel, Sevenoaks

BRITISH MACHINE TOOLS AT CANADIAN TRADE FAIR.—With the co-operation of the Board of Trade and the Canadian Ministry of Trade & Commerce, British tool, machine tool, and scientific instrument manufacturers are organising a collective display of goods at the Canadian International Trade Fair, which is to be held in Toronto. From May 29 to June 9, nearly 100 British manufacturers show, among many other exhibits, 250 machine tools, powered and in action, as well as modern measuring equipment and scientific instruments. Every endeavour is being made to produce and rapidly deliver the models and designs required by Canadian buyers and to provide for the servicing of machines after delivery and for the prompt supply of spare parts. The difficulty of overlong delays in deliveries is being overcome by giving the dollar markets priority over all others, not excluding home needs.



## The Scrap Heap

### Railwaymen Aspire to Boxing Fame

Clerks, engine cleaners, firemen, plate-layers, vanboys, and porters are among the 117 members of the staff of British Railways who have entered for British Railways National Boxing Championships. Eliminating contests of the London Mid'and Region will be held at Manchester on January 21, and at Crewe on January 28. Largest contingent comes from Liverpool, with 24 entries, while Manchester supplies 11, Dublin 10, Horwich Works 8, and London 6 contestants.

### He Stole a Motor Coach

Pleading guilty to stealing a motor coach worth £4,000 belonging to Hants & Sussex Coaches, a labourer, of no fixed address, was at London Sessions sentenced to four years corrective training.

It was stated that the coach had been parked in Baylis Road, Waterloo. A police officer said defendant had told him that he was due to appear before the Liverpool magistrates on a summons by his wife and he took the coach to get there.—From "The Evening News."

### Emergency Meals for Tigers

The British Railways cargo steamer *Hythe* brought five Bengal tigers from Calais to Folkestone. They were kept in the Customs shed after unloading to await transport to a London circus.

Unfortunately they arrived without any food because no meat could be brought over from the French port. British Railways staff therefore obtained 200 lb. of horse-flesh from a Folkestone slaughterer and when the tigers were given their meal just before midnight their roars woke many people in the vicinity.—From "The Times."

### "Train of Events"

In connection with a recent showing of the film "Train of Events" in York, it was arranged that the driver taking charge of the "Northumbrian," Newcastle-Kings Cross express, at York on December 5, should be asked to choose



Drawing numbers for six British Railways runabout tickets

from six bags numbered tickets representing certain free travel facilities on British Railways. At the cinema each day during that week the six patrons whose numbers corresponded to those chosen were informed that next summer

they each would be given a £1 British Railways runabout ticket, providing unlimited travel for a week over an extensive area bounded by York and many North Eastern seaside and inland resorts.

### "The Long Arm of the Rail"

Mr. J. C. Mertens, Deputy Traffic Manager of the Iraqi State Railways, recently forwarded to its destination by ordinary post an inter-Administration free rail-letter addressed by the Hungarian State Railways, Budapest, to the East Indian Railway, Calcutta.

He says: "It speaks well for the long arm of the rail that the packet found its way by train as far as Basra, nearest exchange point for India on the all-rail route from Europe. It took a month to do it, but was doubtless hindered by a defeatist endorsement on the envelope, 'Nous n'avons pas le moyen de faire suivre ce pli aux Indes par voie ferrée.' Maybe, but it was worth trying!"

### Tailpiece

This Christmas I had presents  
From friends both far and near—  
The sort of friends who send you  
A Christmas gift each year.

There was a smart pullover,  
Some ties of lively hue,  
Two bottles packed so snugly  
And labelled "Mountain Dew."

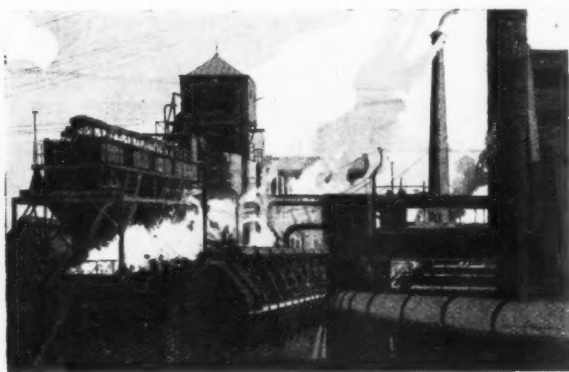
A fountain pen, the latest,  
A token for some books,  
Some after-shaving lotion  
To help improve my looks.

The Family, too, reacted,  
With presents for their Dad,  
A scarf, a woolly waistcoat,  
To make the old man glad.

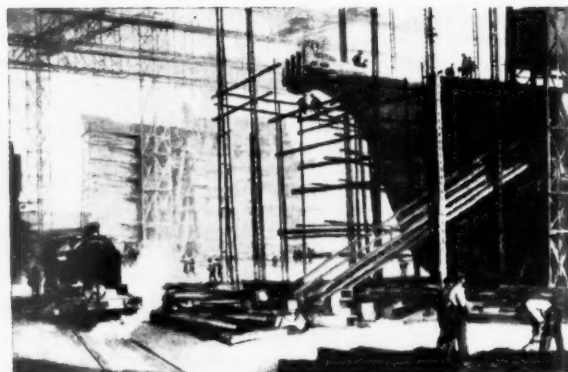
Mum weighed in with a beauty,  
And it's the best one yet,  
A whole year's paid subscription  
For my *Railway Gazette*.

R. M.

## Examples of British Railways Posters



SERVICE TO INDUSTRY  
**STEEL**



SERVICE TO INDUSTRY  
**SHIPBUILDING**

Two more examples of posters issued by the Railway Executive calling attention to the services rendered by the railways to industry. An editorial article on this subject appeared in our issue of December 30, 1949

# OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

## SOUTH AFRICA

### Coal and Mineral Traffic

The railways carried 1,897,867 tons of coal in September, 1949, which was 250,849 tons more than in the same month of last year. Returns for the first six months of the current financial year are now available and show that 10,861,475 tons of coal were moved by rail in that time; this is 767,000 tons more than in the same period of the previous year. Coal production for the five weeks ended October 1 totalled 21,192,329 tons, 306,233 tons more than in the corresponding period of last year. Coal export figures were respectively 277,314 and 168,568 tons.

In the financial year 1948-49, 399,619 tons of manganese ore were hauled to the ports for shipment. In the first six months of the present year 422,994 tons went by rail, with 86,980 tons carried in the five weeks ended October 1 as compared with 27,942 tons in the corresponding period of last year. Chrome hauled in the same period totalled 27,444 tons. Some of the other minerals and ores hauled for export during September were asbestos, 6,979 tons; copper, 11,333 tons; vermiculite, 1,501 tons; and antimony, 433 tons.

## CANADA

### Dieselisation in Ontario

Of the \$12,000,000 order placed by the Canadian Pacific Railway for 58 diesel locomotives to be used in freight service on the 517-mile Schreiber, Ontario, division between Fort William and Cartier, the Montreal Locomotive Works will build 44, and the General Motors diesel plant at London, Ontario, the other 14.

In making the announcement, Mr. N. R. Crump, Vice-President of the C.P.R., said that the diesels will be able to operate further east to Chapleau and MacTier in Ontario, and possibly to Toronto and Montreal when the summer navigation season opens on the Great Lakes. The new units will replace 68 steam locomotives to be drafted elsewhere on the system.

The diesels will be among the first of their type manufactured in Canada. Although the initial investment may seem heavy at a time when Canadian railways are wrestling with the problem of adjusting rates to heavily increased operating costs, substantial savings are expected from the change-over to diesels.

Work is now under way on servicing facilities for the locomotives, and key men are receiving maintenance training at the American Locomotive Works diesel school at Schenectady, N.Y., and General Motors at La Grange, Illinois. The new diesels will be faced with severe winter operating conditions in the Schreiber division;

winter temperatures of 50° below zero are met with.

The heaviest traffic is during the winter when the lakes are frozen over. It is hoped that the ability of diesel locomotives to haul greater tonnage than the steam locomotives will increase the flow of traffic over the single-track division, especially in sub-zero weather when the operating efficiency of steam locomotives drops sharply.

### Diesels for C.N.R. Transcontinental Service

The Canadian National Railways have introduced streamlined 4,500-h.p. diesels in transcontinental service. The "Continental Limited" is being hauled halfway across the continent by a demonstration triple unit to determine the adaptability of diesel power to Canadian conditions. On a test run, in freight service, a twin-unit cut five hours from the regular schedule between Toronto and Winnipeg, and from Winnipeg to Montreal with a main-line freight train, it cut twelve hours from the regular schedule.

## UNITED STATES

### Nickel Plate Leases Wheeling & Lake Erie

The New York, Chicago & St. Louis Railroad (The Nickel Plate) has leased the Wheeling & Lake Erie Railway, which is now known as the Wheeling & Lake Erie District of the Nickel Plate. The corporate existence of the leased railway will continue and its president remains in office.

## ARGENTINA

### Advance Issue of Tickets to Córdoba

In view of the present heavy tourist traffic to the Córdoba Hills, the General Mitre Railway now issues tickets up to 30 days in advance and also books the return journey with bed or numbered seat.

### Funds for the Railways

The Executive Power recently issued a decree authorising the handing over of 263,000,000 pesos to the Argentine Railways so that they may carry out their obligations under the Government plan for the current year. A further decree provides for a payment of up to 75,000,000 pesos to the General Belgrano Railway as an advance from the State to enable working expenses for 1949 to be covered, as it has been found impossible to do so out of revenue.

### Committees to Study Transport Problems

The Ministry of Transport has set up a number of committees to study the following aspects of railway working: "tourism," signalling and communica-

tions, better use of wagons, statistics, "planning," workshops, co-ordination of medical services, arbitration, staff training, waybills, and mechanisation of booking offices and filing systems. The terms of reference of the "planning" committee cover principally the study of rates and charges.

### Increase in Cost of Meals in Dining Cars

The Ministry of Transport has authorised the cost of meals in dining cars to be increased to seven pesos (first class) and four pesos (second class), as against three and two pesos five years ago. Other prices show a similar increase.

### Workmen's Dwellings at Bahía Blanca

Nine blocks of workmen's dwellings are to be erected at Ingenieró White (Bahía Blanca), General Roca Railway.

### One-Class Suburban Travel

A communique issued by the Ministry of Transport states that the General Mitre Railway is installing upholstered seats in second-class electric stock used on the Buenos Aires suburban services, with a view to the introduction of one-class trains at an early date.

### Increase in Passenger Rates

All main line and suburban passenger fares, including those for season tickets, have been increased as from December 1 last. The new fares now in force are still less than the basic kilometric rates established by the uniform rate book of February 1, 1949, but the effect of this latest step is to reduce the wide difference in rates—especially suburban—being charged on the different lines. Thus, the new fares on the General Roca and D.F. Sarmiento Railways, where very reduced suburban passenger fares had been in force, show a larger percentage increase than those on the General Mitre Railway, where a higher charge per km. existed. The rate per km. is still not the same on all lines, but the gap has been considerably lessened.

### Rationalisation of Railway Layout in Rosario

A new junction between the ex-Rosario-Puerto Belgrano and ex-Central Argentine railways has been installed in the city of Rosario, enabling trains of the former line to run into Rosario North and Central stations of the General Mitre Railway. Goods trains of the ex-Central Argentine Railway, which formerly entered the port through Rosario East goods station, will henceforth enter through Villa Diego (ex-Rosario-Puerto Belgrano Railway). This is the first step to be carried out of the railway replanning scheme in Rosario, and, among other things, will enable Rosario East goods station and Rosario R.P.B. pas-

senger and goods station to be closed and permit the lifting of 12½ miles of track, the abolition of 19 level crossings, and the opening up of 46 streets at present blocked by the railway. The Santa Fé station of the General Belgrano Railway has already been closed to passenger traffic and converted into a motor coach station.

## SWITZERLAND

### Power Requirements of the Federal Railways

A report on the requirements of electric power of the Federal Railways by the general management, was the subject of a resolution by the board of administration to build another railway-owned power station in addition to the existing six. This scheme was adopted to make up the power deficit of 70,000,000 kWh. expected by 1965 when probable requirements will total 970,000,000 kWh. against an available quantity of 900,000,000 kWh. without new sources of supply.

### Chemins de fer du Jura

The technical and financial reorganisation of the Chemins de fer du Jura, formed from the amalgamation of smaller railways in the north-west, continues to focus public attention in the region concerned. The company owns and works the Tavannes—Noirmont metre-gauge electric line, the La Chaux-de-Fonds—Noirmont—Saignelégier metre-gauge steam-operated line and the standard-gauge steam line between Porrentruy and Bonfol in the north-west corner of Switzerland. Goods services are operated on the northern extension of the line from La Chaux-de-Fonds, between Saignelégier and Glovelier and passengers on this route are conveyed

by the company's bus services, to the dissatisfaction of the local population which seeks the restoration of the passenger services, as reported in the June 18, 1948, issue.

The most recent reorganisation scheme envisages a contribution of fr. 2,000,000 to be paid by the 21 municipalities served by the system. As for a number of them their share would be too burdensome the three associations for the "defence of the Jura interests" have appealed to all communities in the Jura to contribute by levying two francs per inhabitant, which would yield a total of fr. 200,000.

### New Stock for Branches

To improve facilities on the secondary lines, Federal Railways have decided to build thirteen bogie composite electric coaches of the CF4/4 type with third-class passenger accommodation and goods and luggage compartment.

## FRANCE

### Railwaymen Oppose Economies

Relations between railwaymen and the S.N.C.F. administrative board are strained as a result of proposals to reduce railway expenditures. The S.N.C.F. faces a growing deficit. For 1949 the deficit exceeds fr. 50,000 million and for 1950 it is estimated at fr. 84,000 million, or more than £84,000,000. Some fr. 12,000 million of the increase are attributed to the rise in pension payments to retired railwaymen. The budget estimates provide for a government subsidy not exceeding fr. 50,000 million. The government finance commission proposes to reduce this to fr. 30,000 million.

During 1949, the number of railwaymen employed was reduced by 10,000,

and a further reduction of 10,000 is planned for 1950. The reductions are obtained not by dismissals, but by not recruiting new staff. Monsieur Pineau, Minister of Public Works & Transport, further proposed not to re-engage 5,000 auxiliary railwaymen. To this the railwaymen's federations are strongly opposed. Lowering of the age of retirement was also considered, but such a measure would not affect existing rights. Railwaymen at present retire at the age of 55—engine drivers at 50. Administrative reorganisation and the closing of unprofitable lines were also under discussion, but the total economies resulting were comparatively small.

When the proposed economies were discussed by the S.N.C.F. administrative board, they were strongly opposed by representatives of the railway federations. Finally, the railwaymen's delegates refused to take any further part in the debates and withdrew.

### Locomotive Building

Two prototypes of diesel locomotives for light trains or shunting service have been developed by Forges et Acieries de la Marine et d'Homécourt in its works at Saint-Chamond, near St. Etienne, and are reported to be carrying out first trial runs. Both locomotives have hydro-mechanical transmission, and the tests are said to have met all expectations so far. The same firm has an order of 50 diesel-electric shunting locomotives of 500 h.p. Except for a few units intended for the Paris Metro and for collieries these locomotives are being built to the order of the National Railways, and the first deliveries are due within the next few months. Early in 1949, the firm completed an order for 2-8-2 P-type steam locomotives for the National Railways. Orders in hand for railways in French overseas territories comprise ten 300-h.p. narrow-gauge diesel locomotives with hydro-mechanical transmission, similar to the two mentioned earlier.

## GERMANY

### Electrification in South-West

A start is to be made on main-line electrification in the south-west with the conversion of the Karlsruhe—Basle line, 121 route-miles, as mentioned in the December 9, 1949, issue. It will be followed by the electrification of other important sections in Baden and Württemberg. The following main-line sections are to be electrified within the first stage of the conversion programme: Stuttgart—Bruchsal, 49 route-miles; Karlsruhe—Bruchsal, 13½ route-miles, and Bruchsal—Heidelberg—Mannheim, 32 route-miles.

Stuttgart has been the westernmost point of the electrified main-line system in Bavaria and Württemberg, and the three sections mentioned above are among the most heavily taxed in the south-west, as they carry most of the traffic between it and the north-west and Rhineland.

### Electrification to Dijon



First electric train on the Laroche-Dijon section, S.N.C.F., hauled by Bo-Bo locomotive, entering Dijon Station on December 15, 1949



## Cooper's Bridge Loadings

*A brief explanation of this system of loading as standardised in America and elsewhere, and as compared with British and Indian standards*

(By a Correspondent)

REFERENCE has often been made in these columns to Cooper's Loading in connection with railway underline bridge design in North America, and, in response to queries by several readers, this article is intended to explain and compare this loading with other standard loadings more familiar to the British or Commonwealth reader.

Before 1894 a great variety of engine loadings had been used by the various American railway companies; each company, as a rule, selected a loading based on its heaviest locomotive in service or expected to be running in the near future. As can be imagined, such great variety in specifications for loads made the calculation of stresses by exact methods a troublesome business, and to obviate this, conventional systems of loading were sought giving approximately the same result with much simplified calculations. These conventional loads are usually of two kinds: (a) systems of standard locomotive loads agreeing approximately with actual loads, but in which the axle weight and spacing are modified to secure greater simplicity—the following train load is commonly considered as a uniformly distributed load—and (b) systems in which equivalent loads, such as uniformly distributed loads, are used instead of wheel loads.

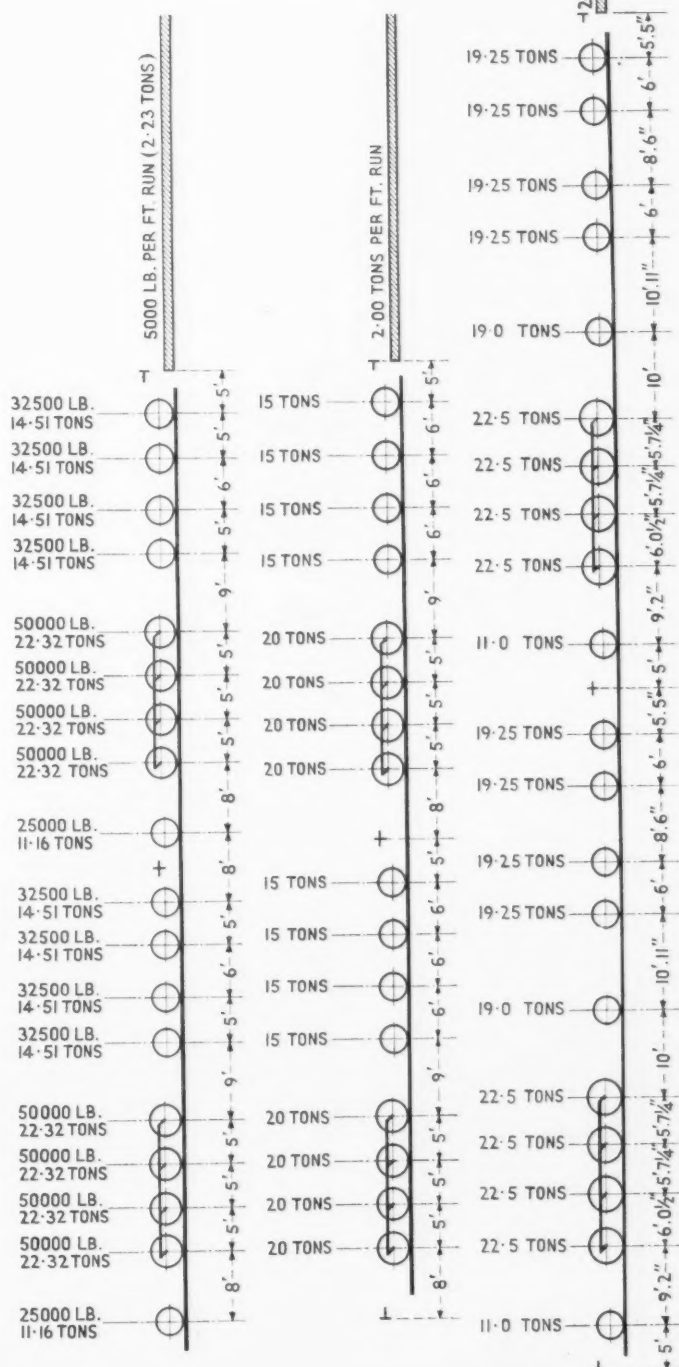
Of the first type, the loads proposed by Mr. Theodore Cooper in 1894 have come into extensive use in America and other parts of the world. They consist of a series of standard loadings, any one of which may be obtained from any other by the use of a constant multiplier. The wheel spacing is the same in all, and is made up as shown in the first of the load diagrams accompanying this article.

It will be noted that this loading consists of two 2-8-0 engines with 50,000 lb. coupled axle weights followed by a train weighing 5,000 lb. per lin. ft. This is called the E.50 loading and others are known as E.40, E.45, E.60, etc. In E.45 loading, for example, the coupled axle weights are 45,000 lb., and the train load 4,500 lb. per lin. ft.

In the case of diesel locomotives, where the axle spacing is generally greater, it is necessary to use more locomotives of the same maximum axle weight to obtain an effect equivalent to the two standard 2-8-0 engines used in the Cooper Loading. Thus it can be assumed for all practical purposes that with diesel locomotives the static loading classification will be less than that indicated by the maximum axle load. For instance, with a maximum axle load of 45,000 lb. the effect will be considerably less than Cooper E.45 loading.

The advantage of this system of loads is that stresses may be calculated for any loading and reduced or in-

Diagrams comparing Cooper's E.50 loading with 20-units British Standard loading, and Indian M.L. (main-line) standard loading

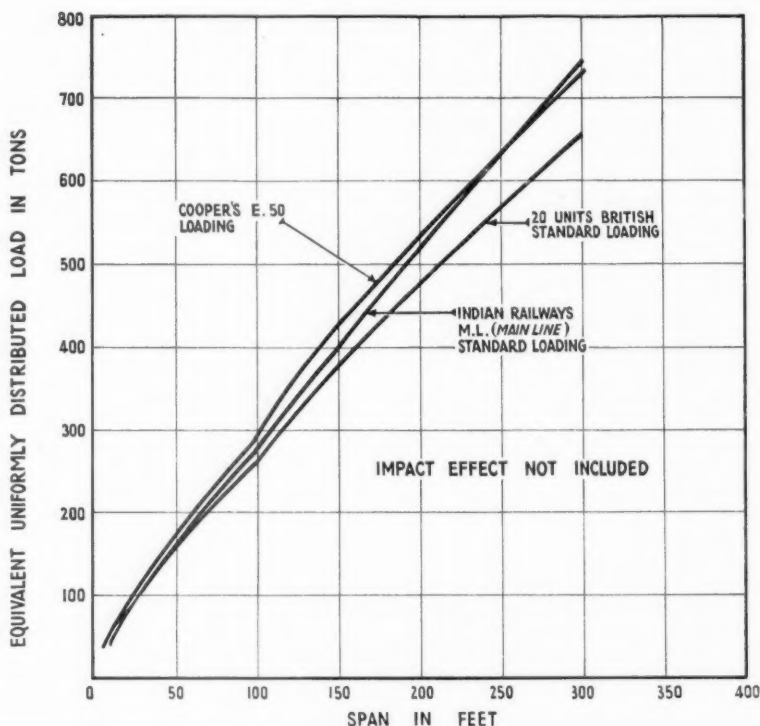


creased to any other by dividing or multiplying throughout by a constant factor. Single bending moment and shear diagrams or tables thus suffice for all the classes.

Since the introduction of Cooper's standard engine loadings, whereby the work of calculation is greatly simplified, there has been little demand for any simpler form of load for ordinary types of bridges. For more complex structures such as arches, and cantilever bridges, however—especially if of long span—some form of equivalent load is often desirable.

The accompanying graphs show the comparison between Cooper's E.50 loading and the standard loadings used by the British and Indian railways. The Cooper system of loading, in principle, could be made suitable for 3 ft. 6 in. metre, and narrow gauge lines by modifying the loading and spacing constants.

*Dead-load—span graphs showing how Cooper's E.50 compares with 20-units British and Indian M.L. standard loadings*



## A Wagon-Mounted Rail Welding Plant

*Apparatus evolved by Swiss Federal Railways operating on single-phase a.c. at 16⅔ cycles*

THE Swiss Federal Railways have developed a novel type of electric rail welding plant mounted on a special wagon and receiving its current supply direct from the single-phase a.c. overhead line at 16⅔ cycles per sec. As all the known welding plants were operating on industrial current of 50 cycles the new plant had to be regarded as an experiment. According to a report which has been published in our Swiss contemporary, *Technische Rundschau*, the experiment has been successful, and the plant has now worked satisfactorily over a period of three years.

Before the plant was built, welding tests with current at 16⅔ cycles had been carried out by the official Swiss Testing Laboratories. It was found that, with the help of suitable electrodes, the low-frequency current did not produce results in any way inferior to industrial current, even in the welding of high-grade rail steel.

Encouraged by these tests, the Swiss railway engineers, in co-operation with various firms, constructed a mobile welding plant for current of 16⅔ cycles. This plant consists mainly of a single-phase, high-voltage transformer with switchgear for connection with the overhead line, some low-voltage switch-gear, and an auxiliary transformer, all mounted on a specially equipped railway wagon. In addition there are three separate welding sets for 16⅔ cycles.

With the aid of jacks and transverse rails, the wagon can be removed easily from the running rails so that there need be no undue interruption of the train service.

It is necessary to exercise great care in ensuring a proper earth connection and the plant must be suitably bonded to the rail return circuit. An additional earth is provided in the form of a flexible copper cable which bridges the running rails at the working site and is also connected to the body of the wagon. The main circuit breaker for the feed from the overhead line has special protective devices.

The electric equipment includes a single-phase oil-cooled transformer of 40 kVA, with tapplings for inputs of 13, 15, and 16·5 kV, interchangeable off load. The plant is protected electrically by heavy-duty cut-outs and the high-voltage equipment in the centre of the wagon is specially encased and protected by railings.

The transformer primary voltages applied to the welding sets are 500 volts for outdoor work with lengthy cable runs, and 220 volts for indoor work, all at 16⅔ cycles.

A 16⅔-cycle supply was found unsuitable for the emery grinders and planers required for the surface treatment of the rails. It was, therefore, decided to add a small rotary transformer for the operation of these machines,

consisting of a single-phase motor with automatic resistance starter, and an a.c. generator.

A separate 220-volt 16⅔-cycle circuit is available for lighting. The cables can cover some 550 yd. of line on either side of the stationary plant so that a removal of the plant is not required before 1,000 yd. of line have been dealt with. To achieve rapid removal, the next site is carefully prepared beforehand, and a second set of tools is available for the transverse movement. The wagon can be hauled by a rail trolley or, for longer journeys, may be placed on an ordinary wagon.

**INDUSTRIAL FILM GUIDE.**—The British Engineers' Association and the British Electrical & Allied Manufacturers' Association have published jointly a booklet entitled: "Guide to Industrial Film Making." Manufacturers are making increased use of specially produced films for such purposes as aids to sales, and instruction to maintenance men and service staffs, and this booklet has been prepared to aid manufacturers in assessing the factors affecting the costs of producing films and the supplementary charges likely to arise therefrom. The guide includes particulars on distribution, technical film terms, and so on. Copies can be obtained, price 2s. each, post free, from the British Engineers' Association, 32, Victoria Street, S.W.1, or the British Electrical & Allied Manufacturers' Association, 36, Kingsway, W.C.2.

## Batteries for Track Circuit and Signal & Point Operation

*Adoption on Southern Region lines of the air-depolarised type of cell in place of the copper-oxide pattern*

EARLY in 1947, the Southern Railway found that the 500-a.h. American copper-oxide caustic soda wet cell, standard on that railway for several years, would no longer be obtainable, and would have to be replaced by some other type purchasable in England.

Various types of wet and dry cells had been investigated and tested by the Southern Railway signal laboratories, and as a result of the experience so obtained the decision was made to use the AD.618A cell for track circuits and the AD.513 cell for signal motor batteries, both of which are manufactured by Le Carbone Limited, of Portslade.

The AD.618A cell, although used in general service in many parts of the world for several years, had not been used in England before 1947. It is an air-depolarised cell with carbon and zinc electrodes and caustic soda electrolyte. It is supplied dry and inert and can be transported and handled without danger. Provision is made for the addition of a small quantity of water when placing in service, immediately after which the cell becomes active and ready for use. Its design involves an entirely new and fundamental feature of regeneration, which enables it to yield four times the capacity for a given quantity of electrolyte compared with the normal caustic soda wet cell.

### Characteristics of New Cells

The principal characteristics of the cell are: size overall,  $5\frac{1}{2}$  in.  $\times$   $5\frac{1}{2}$  in.  $\times$  11 in.; weight 10 lb.; water required  $3\frac{1}{2}$  pints; minimum e.m.f. 1.4 volts; recommended continuous discharge rate 0.100 to 0.200 amp.; maximum continuous discharge rate 0.250 amp.; maximum intermittent discharge rate 0.500 amp. The cell has a capacity when discharged at 0.200 amp. continuously to 1.0 volt of 850 a.h. and 1,000 w.h. The AD.513 is a dry salammoniac cell, first made in England early in the war and designed particularly for heavy duty intermittent service. For some years it has been extensively used on other British railways for signal and point motor operation.

Its characteristics are: size overall  $6\frac{1}{8}$  in.  $\times$   $6\frac{1}{8}$  in.  $\times$   $8\frac{1}{2}$  in.; weight 16 lb.; capacity up to 850 a.h. according to rate of discharge; maximum continuous discharge rate, to obtain full capacity, 200 milliamp.; semi-continuous discharge rate up to 0.5 amp.; intermittent discharge rate up to 5 amp. for periods of 10 sec. at reasonably frequent intervals; e.m.f. 1.4 volts.

The change to the new types of cell was organised by the Signal Engineer's office through the Inspectors and made without difficulty. After two years' experience it can be stated that the economies resulting have exceeded all expectations and have more than justified the change for this reason alone.

With the use of the AD.618A on

track circuits, some causes contributing to savings are:—

(1) The effective voltage on discharge is double that of the older type of cell, so that two copper oxide cells in series could be replaced by one AD.618A.

(2) The material cost for a track battery proves considerably less than with the older type of cell, for similar conditions and equal life.

(3) The AD.618A is self-contained and carried in store as one item, while

the copper oxide cell is carried as five separate items, glass jar, porcelain lid, elements, caustic soda and oil.

(4) The capacity of the AD.618A is a minimum of 850 a.h., 1,000 w.h., whilst the copper oxide cell had a capacity of 500 a.h. and approximately 300 w.h.

(5) It was found possible to increase considerably the capacity of a track battery without increasing the number of cells or enlarging the housing.

(6) The saving in labour for installa-



Track battery feeding track circuit 2 miles 1,744 yd. long at Bere Ferrers, Devon



Automatic signals at Cove, near Farnborough, on Waterloo to West of England main line. The batteries are in the larger of the wooden housings at foot of signal bridge





*Close-up of 10-cell battery for operating the semaphore signal motor at Horsley*

tion and maintenance was very great. To place two cells AD.618A connected in parallel, required only the addition of  $3\frac{1}{2}$  pints of water to each and the connection of wires to them for the battery to be ready for immediate service. The whole operation took only about ten minutes and on an average track circuit the life of the cells was about one year or longer.

With the older type cell, generally four, connected two in series and two sets in parallel, would be used for a similar application. These required a matter of hours to set up or renew, due to the necessity for washing jars, mixing electrolyte, assembling elements, etc., and after being placed in service would last only seven months, as opposed to twelve for the two AD.618A.

The difference in the quantities of water required for renewing was also found to be a very important factor, as four copper oxide cells required from 60 to 80 pints of water for washing the jars and making the electrolyte for each renewal every seven months, while two AD.618A cells required only a total of seven pints for the whole year.

The success of this radical change was found to be dependent on two new factors, ventilation and the method for determining when the cells needed to be renewed.

#### **Adequate Ventilation Necessary**

The copper oxide cell required no ventilation but did need protection against extreme cold. The AD.618A, being air-depolarised, demands adequate ventilation but is far less affected by cold than wet cells. Effective measures have been taken to ensure that a continuous supply of fresh air passes across the tops of the cell, but no special provision has been found necessary for the protection against winter cold.

The general principle adopted is to provide one or more large holes in the bottom or lower part of one side of each

box and corresponding holes in the upper part of it above the level of the tops of the cells. When the lower holes are in the side of the box, the upper holes are placed in the top of the opposing side, ensuring a continuous



*Maintenance officer determining the state of exhaustion of track battery cells by electrical measurement*

supply of fresh air passing across the tops of the cells. No gauze has been placed over the holes, as it tends to obstruct the movement of fresh air and during two years' experience has been found unnecessary.

With copper oxide cells, linemen were able to obtain advance information of approaching exhaustion by noting when

the panel on the cell elements became eaten away. No such visual indication is given by the AD.618A but sufficient warning can be obtained well in advance of exhaustion by taking periodic readings of the voltage of each cell.

On normal discharge this cell has a voltage of about 1.2 and remains at the same point month after month from a few weeks after installation until it has delivered 80 to 85 per cent. of its capacity, which would be during the ninth month of a cell having a life of one year. At this point the voltage starts dropping gradually until, sometime after the cell has given its rated capacity, it falls below 1.0, after which it will fall away more rapidly and the cell become exhausted. Instructions were given to the linemen to take readings periodically across the terminals until the voltage started falling and to renew the cells as soon as this passed 1.15.

In practice, this method has proved perfectly satisfactory; since the cells were installed two years ago, no instances of exhaustion occurring without adequate warning have been reported.

The AD.618A cell, ideal for low continuous or intermittent currents, is not suitable for the heavy intermittent currents demanded by signal motors and for this service the AD.513 has been

adopted. Ten of these are used to operate a 10-volt signal motor and in service are found to have a life of from two to four or more years. No labour other than that of connecting wires is involved for installation or maintenance, and these batteries require much less housing space than was taken by the wet cells formerly used.

## Tracer Controlled Milling Machine

*Hydromatic machine for milling spiral flutes in three drills simultaneously with automatic feed*

A RECENT application of the tracer controlled Hydromatic milling machine is the milling of flutes on taper shank drills; three drills are milled simultaneously and, except for loading, unloading, and starting the machine, the operation is performed automatically.

This machine, which is built by Cincinnati Milling Machine, Limited, Tyburn, Birmingham, is a special 3-24 machine having a spindle carrier mounted at a fixed angle relative to the table. In this particular case the spindle is arranged to mill drills having a helix angle of  $27\frac{1}{2}$  deg. Drive to the spindle is taken from a  $7\frac{1}{2}$ -h.p. flange mount motor, located on a special bonnet on top of the headstock through V belts to a vertical drive shaft, protected by telescopic tubing.

A standard spindle carrier is used, mounted on a special angular saddle, and carrier and saddle are counter-weighted; low series gears are fitted to the spindle carrier to give a speed range of 29 to 222 r.p.m. in eight changes.

The tapering web thickness is obtained through the medium of a form cam operating a servo-valve which, in turn, controls the vertical movement of the spindle carrier, and hence the cutters in relation to the workpieces. In this case, the web taper is .012 in. in 1 in., but it can be modified to suit individual requirements by changing the cam.

The machine table is driven from a leadscrew, incorporating a backlash eliminator, and the screw is powered by a variable-speed hydraulic motor, this

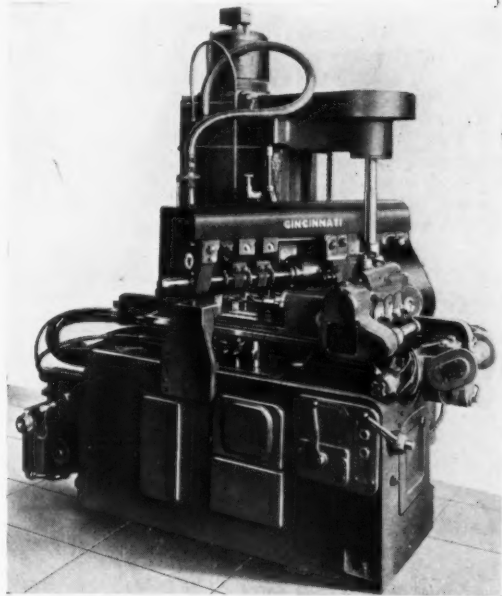
motor also driving the gearing necessary to generate the spiral flute form.

A three-spindle automatic fixture is used, with its spindle set back relative to each other, so that three drills can be milled simultaneously and the flutes in each drill finished at the same length. Provision is made for change gears so that the spiral can be set to suit the drill diameter while maintaining the fixed helix angle.

The components are located on the taper shank and driven by the tang end; different shank sizes can be accommodated by suitable adaptors. Support during the milling operation is provided by bushes contained in a fixed bridge-type bracket from the machine bed, the bushes being located directly under the cutters; interchangeable bushes cater for a range of drill sizes.

The flutes are machined to full depth in one cut, using the down cut method, and different lengths of flutes can be taken care of by adjusting table dogs. The cutters consist of a gang of three

high-speed steel relieved cutters mounted on a standard arbor. One standard outer support and two special cap-type inner arbor supports are used, thereby allowing the arbor, and cutters to be removed without disturbing the gang.



*Hydromatic milling machine showing bridge support used during milling operation*

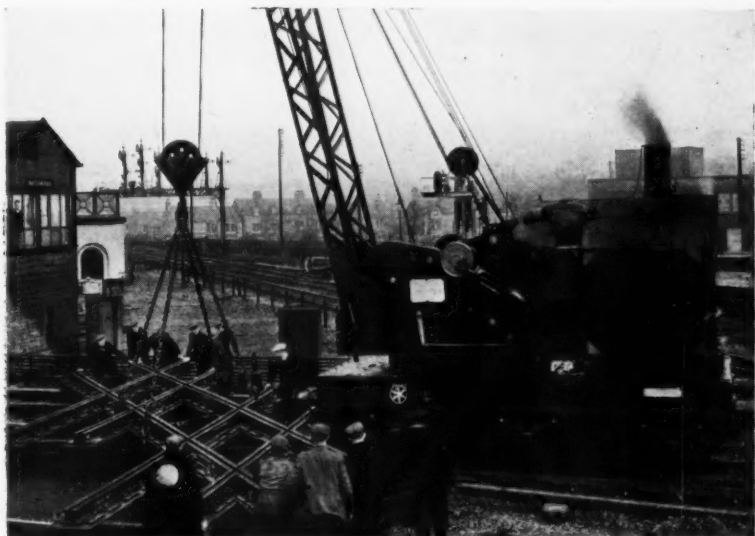
## Flat-Bottom Rail for Built-up Crossings

DIAMOND crossings pre-fabricated from the new standard 109-lb. flat-bottom rails were recently laid in the track at the north end of York Station. While new section flat-bottom rails are now being extensively used for plain line renewal work, this is the first occasion on which they have been used for built-up crossing work.

An interesting feature of the design is the use of the elastic spike fastening for this type of crossing. The rails, vertical throughout the crossing, are laid on mild-steel baseplates 1 in. thick, and with steel straps  $\frac{7}{8}$  in. thick and  $1\frac{1}{2}$  in. wide welded across the baseplates to form shoulders or stops for the bottom flanges of the rails. Elastic spikes hold rails to baseplates and baseplates to longitudinal timbers 24 in. wide and 12 in. deep. The main running line rails and check rails are continuous through the intersections, with flangeways machined through the top flanges and upper part of the rail webs to form the flangeways for the intersecting tracks.

The design and installation was carried out to the instructions of Mr. J. Taylor, Thompson, Civil Engineer,

North Eastern Region, and the direction on the site was the responsibility of Mr. E. L. Triffitt, District Engineer, York.



*Diamond crossing pre-fabricated from standard flat-bottom rail*





is secured to the framing by rivets, and joints are butt welded so as to give a flush surface.

The cars are arranged with end vestibules, and access from rail level is by means of fixed steps at each end of the car. Wide hinged entrance doors open into the vestibules which adjoin the pas-

floor level, both sides and ceiling, with insulation attached, has been mounted in timber frames which can be taken down to allow inspection of the back surface of the exterior steel panelling.

The whole of the body framing and panelling is treated on the inside with a

ger communication gear, is provided. Slack adjusters are fitted to the brake-gear and a handbrake is provided, which can be operated from one end of the car.

#### Lighting Installation

All vehicles are equipped with Stones system of electric lighting and have through electric couplings; each car has a 24 V. Lilliput dynamo and 36 Alconum accumulator cells in three boxes of 12 cells each, the underframe electrical gear being concentrated at one point on a switch panel.

On completion the coaches are shipped whole, painted, and lettered ready for service. The cars are constructed to the requirements of Mr. T. B. Welch, Chief Mechanical Engineer, Nigerian Railway, under the supervision and inspection of the Crown Agents for the Colonies.

Leading dimensions of the carriages are as follow:—

Length over buffers ...	63 ft. 1 in.
Length over body ...	60 ft. 0 in.
Width at waist ...	9 ft. 2 in.
Bogie wheel base ...	7 ft. 0 in.
Height from rail to top of roof ...	12 ft. 0 in.

#### Principal Contractors

The following firms, as sub-contractors, supplied materials and fittings for the new cars:—

Twinberrow bogies ...	G. H. Sheffield & Co. (Engineers) Ltd.
Automatic brake equipment	Vacuum Brake Co. Ltd.
Wheels and axles ...	Owen Dyson Limited
Non-Shock couplers ...	A.B.C. Coupler & Eng. Co. Ltd.
Ventilators ...	Monarch Controller Co. Ltd.
Steel sheets ...	John Summers & Sons Ltd.
Metallic fittings ...	John Levick Limited
Sundeala panels ...	G. D. Peters & Co. Ltd.
Tubular seat frames ...	Deans & Son (Yorkshire) Ltd.
Roof insulation ...	J. W. Roberts Limited
Glass ...	Pilkington Bros. Ltd.
Vynide leather cloth ...	Imperial Chemical Industries Limited
Electric lighting ...	J. Stone & Co. Ltd.
Beclawat Metalouvres ...	Beckett Laycock & Watkinson Limited
Alpax castings ...	Lighthalloys Limited
Pressure filters for water drinking ...	Berkefeld Filters & Water Softeners Limited



View of the interior showing the vestibule and seating arrangements

senger compartment, and a toilet compartment is positioned centrally in the car. Except for the steel toilet partition, the car is open from end to end. To facilitate cleaning the floor is covered to the body side finish; the floor boards are laid with a slight incline towards the centre of the car.

Seating accommodation has been provided for 93 passengers, and the seat frames are of tubular welded construction with spring-framed cushions and backs upholstered in Vynide leather cloth; seats for two passengers are arranged on one side of the gangway and seats for three passengers on the other side. The body side lights are of the lift-up type; they are glazed with neutral tinted glass and provided with sash holders.

#### Access to Cars

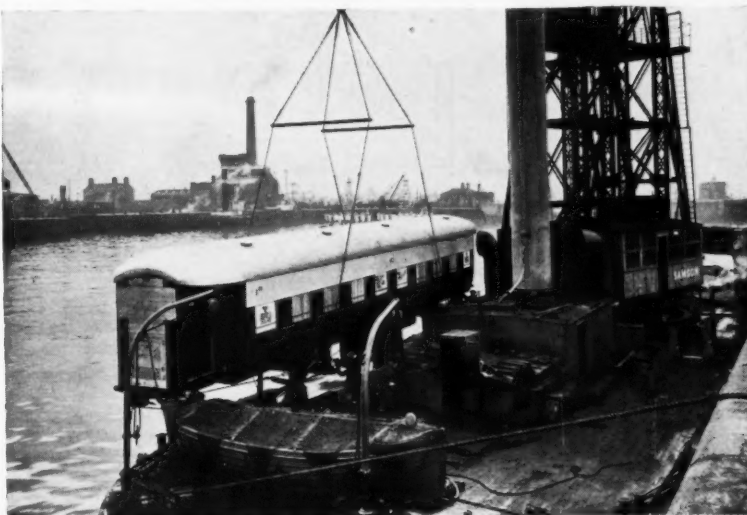
Sliding doors at the body ends give access to other cars when coupled together, a hinged gangway plate and handrails being provided. All partitions and doors are constructed of blockboard, giving a modern flush-finished appearance. The toilet compartment is lined from floor to ceiling with 22-gauge dull polished stainless-steel sheets. The floor and latrine are combined in a one-piece Alpax light-alloy casting, and a louvre frame is provided with Beclawat Metalouvres. A 150-gal. water tank is fitted in the roof over the toilet compartment, and supplies drinking water to a British Berkefeld pressure filter, fitted with a pump.

The roof is insulated with two layers of hesian-backed flexible asbestos, and the sides are insulated with Insulwood panels. The interior finishing above

waterproof cement as a rust-preventive measure. The interior of the cars is brilliant green from floor to waist, pale cream from waist to cantrail, and very pale cream ceiling panels. The seat frames and mouldings are finished in apple green and the seats upholstered in brown Vynide.

#### Bogie and Brake Gear Details

Each vehicle has Sheffield Twinberrow bogies with disc wheels and is fitted with A.B.C. Non-Shock automatic centre couplers. Vacuum braking from two 18-in. cylinders, working in conjunction with pull-chain emergency passen-



Completed coaches being shipped fully erected and ready for service

## Vulcan Side-Tank Locomotives for India

*Ten 4-6-4 tank locomotives for suburban traffic*

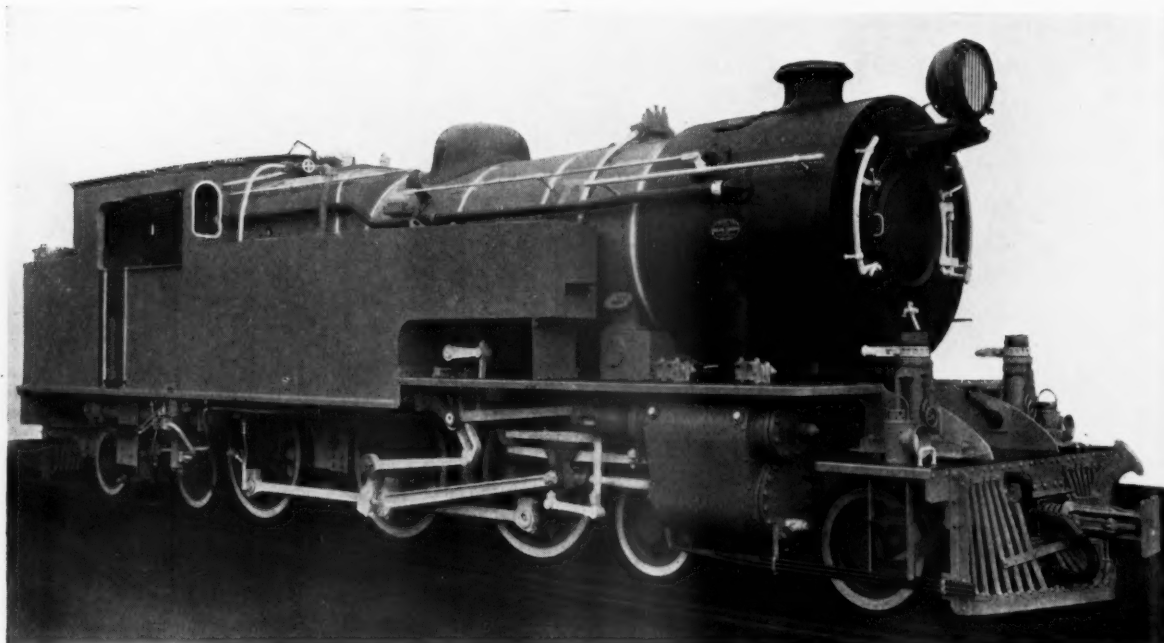
**A**N order for the supply of ten 4-6-4 side-tank locomotives to the Indian State Railways for suburban traffic has recently been completed by the Vulcan Foundry Limited, Newton-le-Willows. They have been allocated, six to the Saurashtra Railways and four to the Bikaner State Railway. The design incorporates the standard characteristics of metre-gauge locomotives in India, arranged to negotiate a minimum

curve of 337 ft. radius, the maximum axleload being 11 tons.

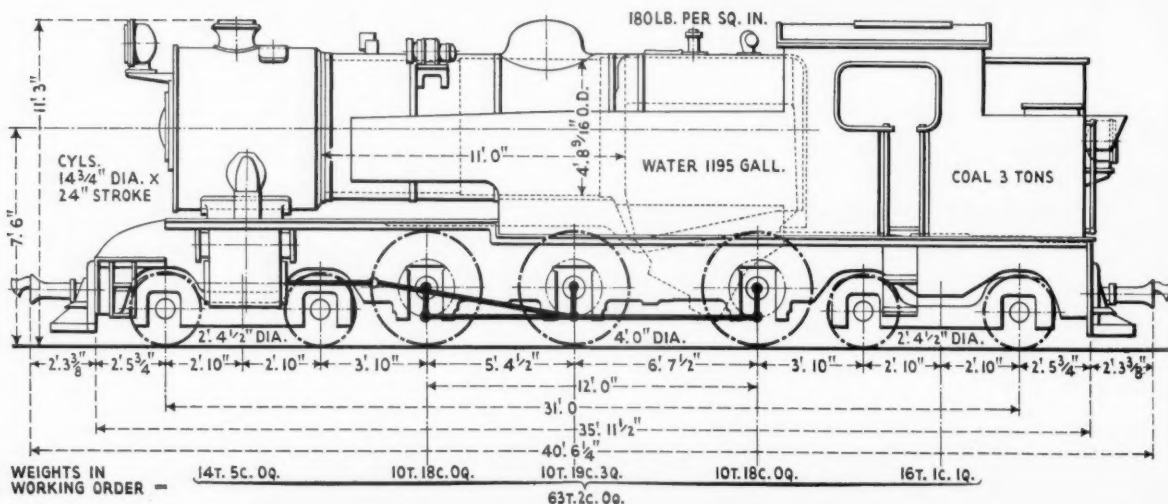
The boiler has a Belpaire firebox with an inner firebox of steel. Flexible stays are provided in the breaking zones, and the roof stays are direct, except for the four front rows, which are of the flexible type; all stays are of Longstrand steel. A multiple-valve header with a 21-element superheater is fitted, and a tangential dryer with shut-down valve is provided in the dome.

The firegrate has a drop section at the front, and rocking firebars hand-operated from the cab; the ashpan is of the all-welded hopper type, and has air doors at front and rear. The dump door is operated by a handle at the left-hand side of the engine. A steam stand is provided with the necessary valves supplying steam to injectors, ejectors, soot blower, and other fittings, and the top-feed clack boxes

*(Continued on page 53)*



*Metre-gauge side-tank locomotive for suburban traffic, Indian State Railways*



*Diagram showing principal dimensions of Vulcan tank locomotive*

## RAILWAY NEWS SECTION

## PERSONAL

## BRITISH RAILWAYS APPOINTMENTS

The Railway Executive announces that, with the concurrence of the British Transport Commission, the following appointments have been made:—

*At Railway Executive Headquarters (from January 1)*

Mr. J. R. Pike, formerly Chief Officer (Goods), to be Chief Rates & Charges Officer.

Mr. H. H. Phillips, formerly Assistant

as a relief clerk. In 1910 he was transferred to the Chief Goods Manager's Office, and he was appointed Chief Staff Clerk in 1916, afterwards taking charge of the indoor work appertaining to the Chief Goods Manager's Office and being promoted Chief Clerk. On the amalgamation in 1923 he was appointed Chief Clerk to the Divisional Goods Manager, Northern Division, L.M.S.R. In 1925 Mr. Yeaman was appointed Indoor Assistant, and he became Assistant Goods Manager, Northern Division, in 1927. From

in the Goods, Traffic and Docks Departments. After completing his training he was employed at Aberdare for a short time before being transferred, in 1929, to the Chief Goods Manager's Office, Paddington, as an outdoor investigator responsible for staff and terminals work. In 1933 Mr. Hollingsworth was made District Cartage Controller, Swansea, and later returned to Paddington to take charge of the Staff Investigation Committee. After serving as Chief Clerk in the Chief Goods Manager's Development Department, he



*Mr. William Yeaman*

Commercial Superintendent, Scottish Region, British Railways, who retired on December 31



*Mr. T. H. Hollingsworth*

Appointed Commercial Superintendent, Scottish Region, British Railways

Chief Regional Officer, Western Region, to be Chief Commercial Officer.

Mr. J. E. M. Roberts, formerly Assistant Commercial Superintendent, Southern Region, to be Executive Officer (Rates & Charges).

Mr. F. Grundy, formerly Assistant Commercial Superintendent (Goods), London Midland Region, to be Executive Officer (Goods).

*Scottish Region*

Dr. W. A. R. Mailer, Assistant Medical Officer, Southern Region, to be Regional Medical Officer, Scottish Region, in succession to Dr. T. C. D. Watt, who retires on January 31.

Mr. William Yeaman, who retired on December 31 from the position of Commercial Superintendent, Scottish Region, British Railways, was born at Kirriemuir, and joined the Caledonian Railway in 1903, in the District Traffic Superintendent's Office, Perth, subsequently being engaged

June to December, 1929, he acted as District Goods Manager, Leeds, and in January, 1930, was appointed Commercial Assistant to the Chief Goods Manager. He was appointed Goods Manager of the Northern Division in 1931, and became Commercial Manager of the Northern Division—a territory which covered the entire L.M.S.R. system in Scotland and a part of the North of England—in 1932. Mr. Yeaman was appointed Commercial Superintendent, Scottish Region, on January 1, 1948.

Mr. T. H. Hollingsworth, M.Inst.T., Principal Assistant to the Commercial Superintendent, Western Region, British Railways, who has been appointed Commercial Superintendent, Scottish Region, was educated at Cardiff, and joined the Great Western Railway there in 1913. After serving in H.M. Forces, he returned to Cardiff, before being selected, in 1923, for a four-years course of special training

was appointed, in 1938, Assistant District Goods Manager, Cardiff. He became District Goods Manager at Worcester in 1942 and at Bristol in 1944. He was appointed General & Staff Assistant to the Chief Goods Manager in 1946, and since January, 1948, has been Principal Assistant to the Commercial Superintendent, Western Region.

Mr. Ashley S. Ward, who has been Chairman of Thos. W. Ward Limited since 1941, has resigned from that office, but remains a Director, and will act in an advisory capacity. In recognition of Mr. Ashley Ward's service to the company he has been appointed President. Mr. George Wood has been appointed Chairman, and Mr. Frank R. Stagg, Deputy-Chairman; Mr. H. W. Secker and Mr. J. Walton become Joint Managing Directors; and Mr. Arnold Carr, hitherto in charge of London area operations, is to transfer his activities to Sheffield for other important





**Mr. C. E. Jefferson**

Appointed Vice-President (Traffic), Canadian Pacific Railway



**Mr. R. G. Pole**

Divisional Superintendent, Bristol, G.W.R., and Western Region, British Railways, 1929-49



**Mr. Leslie Edwards**

Appointed Divisional Superintendent, Bristol, Western Region, British Railways

work. Mr. F. W. Robinson, a Local Director, has been appointed to the full board of the company, and will take charge of London area interests in place of Mr. Carr.

Mr. C. E. Jefferson, who has been appointed Vice-President (Traffic), Canadian Pacific Railway, was born in Boston, and began his railway career in that city with the then Canadian Pacific Despatch (now part of the C.P.R.). In 1911 he entered the Joint Tariff Bureau of the Boston & Maine, Maine Central and New York, New Haven & Hartford Railroads. Mr. Jefferson went to Montreal in 1913, to the Freight Tariff Bureau of the C.P.R. He served as General Freight Agent at Winnipeg from 1921 to 1927, and as Assistant Freight Traffic Manager at Winni-

peg from 1927 until 1930, when he returned to Montreal, as Freight Traffic Manager for the system. Under a reorganisation at the beginning of 1948, he was appointed General Traffic Manager, in charge not only of freight traffic but of steamship, air and rail passenger traffic.

Mr. R. G. Pole, Divisional Superintendent, Bristol, Western Region, British Railways, who retired on December 31 after 51½ years' service, has for the past 20 years been responsible for that division, which is the largest in the Western Region. During that time he supervised the train arrangements necessitated by the reconstruction of Temple Meads Station; and throughout the war years the movement through the area of the large amount of military traffic concentrated on that part

of the country was one of his responsibilities. After entering the service of the Great Western Railway at Devizes in 1898, he served at Pangbourne and Newbury Stations before moving to the Office of the Superintendent of the Line at Paddington in 1900. He gained experience in the various departments of that office, and was, in 1906, appointed to the outdoor travelling staff, first as Parcels Traffic Supervisor, and later as Goods Train Runner. In 1919, Mr. Pole was promoted Chief Clerk to the Westbury Divisional Superintendent, and, with the closing of that office in 1922, was transferred to Bristol as Assistant Divisional Superintendent, where in 1929 he became Divisional Superintendent.

Mr. Leslie Edwards, who has been appointed Divisional Superintendent, Bristol, Western Region, British Railways, commenced his railway career at Box Station, Great Western Railway, in 1916, and, after serving at Bradford-on-Avon and Corsham Stations, was transferred in 1922 to the Divisional Superintendent's Office at Bristol. There he was engaged in various duties, including outdoor activities in connection with holiday traffic and the acceleration of passenger trains. His next promotion came in 1935, when he moved to the Office of the Superintendent of the Line at Paddington, where he dealt with special passenger train arrangements. Four years later he was appointed Chief Clerk to the Divisional Superintendent at Chester, and in 1941 was made Assistant to the Divisional Superintendent at Bristol. In 1946 Mr. Edwards again went to Paddington, as Operating Assistant to the Superintendent of the Line (now Operating Superintendent), which position he vacates on his new appointment.

#### Presentation to Mr. A. H. Peppercorn



Mr. A. H. Peppercorn, who retired recently as Chief Mechanical Engineer, Eastern & North Eastern Regions, British Railways, examining the lamp standard presented to him by Mr. C. P. Hopkins (right), Chief Regional Officer, North Eastern Region (since January 1 C.R.O., Southern Region), on behalf of N.E. Region officers

#### FUNERAL OF MR. A. M. NEWBOLD

The interment took place at Tonbridge, Kent, on January 10 of Mr. A. M. Newbold, Agent-General in France of British Railways, who died on December 18. At the funeral service held in Paris on December 22, Bishop Chambers deposited on the coffin the Cross of the Legion of Honour which the French Government has posthumously awarded him. Sir Oliver Harvey, the British Ambassador, led a delegation from his embassy, and the Railway Executive was represented by

Messrs. R. H. Hacker, Chief Officer (Continental); J. L. Harrington, Chief Officer (Administration); R. E. Sinfeld, Continental Superintendent, Southern Region; T. W. D. Abell, Divisional Marine Manager, Dover, Southern Region (also representing Mr. R. P. Biddle, Docks & Marine Manager); and S. Matthews, Chief Clerk, Continental Superintendent's Office, Victoria. Also present were Monsieur M. Lemaire, Chairman, International Union of Railways; Monsieur H. J. B. Taine, Secretary (also representing Monsieur P. W. Le Matre, Managing Director), French Railways Limited, London; Monsieur le Comte de Kerdel; and Monsieur M. Flourat, lately President, French National Railways. Those represented included the British Chamber of Commerce in Paris; the Wagons-Lits company; and Monsieur P. Tissier, President, and Monsieur L. Armand, General Manager, French National Railways.

We regret to record the death on January 7, at the age of 78, of Sir Thomas Garmondsway Wrightson, Bt., Chairman & Joint Managing Director of Head. Wrightson & Co. Ltd.

Dr. M. M. Loubser, Chief Mechanical Engineer of the South African Railways, has retired.

Mr. W. Marsh, previously Assistant to Chief Mechanical Engineer for General Purposes, Southern Region, British Railways, has been appointed Assistant to Accountant.

Mr. C. J. Linzell, who is joint Managing Director with Mr. L. F. Eve, of Crawford & Co. (Tottenham) Ltd., has been appointed a Director of the British Engineers Small Tools & Equipment Co. Ltd.

We regret to record the death on January 5, at the age of 64, of Mr. W. L. Leech, M.I.Mech.E., who spent his early career in the service of Indian railways, and after retiring was associated with the railway business of George Spencer, Moulton & Co. Ltd.

Thos. Cook & Son Limited announces that, with a view to strengthening the board of its Australasian subsidiary, Thos. Cook & Son (Australasia) Pty. Limited, it has, with the approval of the British Transport Commission, appointed Sir Norman Martin, the retiring Agent-General for Victoria, as resident Director in Australia, covering both Australia and New Zealand. Sir Norman Martin sailed for Australia on the *Himalaya* yesterday (January 12). The General Manager of Thos. Cook for Australia is Mr. F. T. Luckman.

A delegation of four British hoteliers, formed at the invitation of the Economic Co-operation Administration and the Organisation for European Economic Co-operation, sailed on January 11 in the *Mauretania* for New York, where it will join with similar delegations from Eire, Belgium, Luxembourg, Holland and Turkey. Together they will go on to Washington. The delegations will study problems connected with the hotel industry. Arrangements on this side have been made by the British Tourist & Holidays Board at the request of the Board of Trade. Members of the British delegation are:—Mr. John Clancy, J.C. Hotels Limited; Mr. M. R. Mathews, Trust Houses Limited; Miss Marjorie Moor; and Mr. E. Vacher, Hotels Executive, British Transport.

Mr. J. H. Brebner, Chief Public Relations & Publicity Officer of the British Transport Commission, is at present in Northern Ireland, at the invitation of the Ulster Transport Authority, for the purpose of advising that body on public relations and publicity.

#### MEMORIAL SERVICE FOR SIR MONTAGUE EDDY

A memorial service for Sir Montague John Eddy, who was Chairman of the Buenos Ayres Great Southern and Western Railway Companies, was held on January 6, at St. Margaret's, Lothbury. The Bishop of Stepney officiated. Those present, in addition to family mourners, included:—

Messrs. E. R. Air, R. W. J. Allen, R. Adeane, J. W. Berry, B. H. Binder, H. J. Binder, C. R. Bock, S. F. M. Burge, Mark Baring, E. B. Baring, A. J. Boyd, T. H. Bishchoff, G. C. Brighten, Sir Robert Burton Chadwick, Lord Cornwallis, Sir Henry Chilton, Messrs. H. L. Cluer, George Cocollis, Hildred Carlisle, Kenneth Carlisle, H. Charney, K. Cole, W. Codrington, Viscount Davidson (represented by Mr. Harold Fraser), Major-General G. P. Dawney, Messrs. H. C. Drayton, Mark Denne, Ronald Drysdale, Gerald Drysdale, J. F. Dyball, W. A. Dunbar, J. W. C. East, S. Earl, W. J. Eldridge, Sir Sam Fay (represented by Mr. G. E. Fay), Messrs. S. E. Fay, Harold Fraser, Dr. W. S. Fox, Messrs. H. R. Granger, N. F. E. Grey, Juan Gatto, F. G. Grubb, L. Gibbs, Francis Glyn, Sir Patrick Hannon, Sir Cuthbert Headlam, Mr. W. E. J. Hodge, Lt.-Colonel R. Tristram Harper, Messrs. C. F. Holland, A. B. Henderson, N. B. Henderson, Alan Hadden, C. R. S. Harris, J. K. Henderson, W. Howard-Williams, H. V. Harby, J. L. Heyworth, W. Hawthorne, H. J. Irish, Sir Edward Mather Jackson, Lord Luke, Mr. Maurice Lubbock, Sir Reginald Leeper, Messrs. M. Lubbock, F. Mason, W. L. Lowe-Browne, R. A. Loudoun, Ronald Leslie, Sir Everard Meynell, Sir Alexander Murray, Messrs. R. W. Musson, R. A. McWilliam, C. W. Mason, W. Mackie, V. M. Marshall, A. S. Matthews, Charles Micklem, J. K. Michie, Sir George H. Nelson, Sir Edward Peacock, E. F. Power, W. Woodbine Parish, S. J. Payne, W. J. Phillips, K. Preston, Sir William Rootes, Sir Reginald Rootes, Messrs. H. G. N. Read, B. Russell, H. G. Read, R. T. Robinson, Sir James Dyer Simpson, Messrs. R. W. Sturgeon, L. H. Short, S. C. Sheppard, H. W. Stevens, R. M. Stahl, A. C. Tod, C. F. Trustram, G. F. Taylor, P. N. Tarleton, C. E. Turner, Lord Vestey, Messrs. Ronald Vestey, Michael Verey, Lord Wardington, Messrs. Fortescue Whittle, J. F. White, J. Wilson, J. Wolfe-Barry.

#### B.T.C. LEGAL SERVICE

The British Transport Commission announces that a legal service has been established to take over the duties hitherto performed by the Solicitor to each Region of the Railway Executive and by the Solicitors to the London Transport Executive, the Docks & Inland Waterways Executive and the Tilling Association, and generally to carry out the legal work of the Commission and all Executives, other than that which has been undertaken on behalf of certain of the Executives by private firms. The Commission's legal service came into operation on January 2, and the offices of the Solicitors mentioned above closed on December 31, 1949. Mr. M. H. B. Gilmour, Chief Solicitor to the Commission, is in charge of the legal service, with his head office at Euston Station, N.W.1, and the Deputy Chief Solicitor is Mr. R. P. Humphrys, who also has his office at Euston. The following divisions have been established:—

Parliamentary & General: Assistant Chief Solicitor: Mr. H. A. Chapman (4, Cowley Street, S.W.1).

Litigation & Prosecutions: Assistant Chief Solicitor: Mr. Roger Chitty (Paddington Station, W.2).

Conveyancing: Assistant Chief Solicitor: Mr. E. Coleby (Euston Station).

The following members of the legal service have been appointed to act as Legal Advisers to the London Transport Executive and the Docks & Inland Waterways Executive, respectively:—Mr. S. G. Jones (55, Broadway, S.W.1), and Mr. E. A. Boothroyd (22, Dorset Square, N.W.1).

Mr. H. L. Smedley retains his position as Legal Adviser & Solicitor to the Railway Executive and its headquarters, and Mr. G. W. Quick Smith continues to act as Secretary & Legal Adviser to the Road Haulage Executive.

#### Vulcan Side Tank Locomotives for India

(Concluded from page 50)

are fitted on the first boiler ring. The cylinders are 14½ in. dia. by 24 in. stroke and are fitted with cast-iron barrel liners; steam distribution is effected by 8-in. dia. piston valves actuated by Walschaerts valve gear. Skefko roller bearings are provided for the eccentric cranks. The connecting rod little ends are oil lubricated, while the big ends, coupling rods and the bronze coupled axleboxes are grease lubricated. A Wakefield A.C. type 2-Feed, sight-feed lubricator provides oil lubrication to the cylinders and piston valves.

The frames are of plate construction with adequate cross-staying. The front and hind bogies are of the side bearer type, spring side controlled, with Timken roller bearing axleboxes, and are identical with the bogies of the "Y.B." and "Y.C." class recently completed by the Vulcan Foundry for the Indian Government. Side tanks and bunkers are of all-welded construction; the filling holes and sieves are situated on the bunker tank and connected to the side tanks by equalising pipes with non-return valves to prevent water from flowing back into the bunker tank and overflowing at the filling holes. The coupled springs are over the axleboxes and the locomotive is compensated throughout. A Stone-Douta electrical speed indicator is fitted and is driven from the trailing crank pin. The locomotives were built to the inspection of the consulting engineers, Messrs. Rendel, Palmer & Tritton. The engines were transported fully erected by road to Liverpool for shipment to India.

The principal dimensions of the locomotives are as follow:—

Cylinders (2) ...	14½ dia. × 24 in. stroke
Coupled wheel, dia. ...	4 ft. 0 in.
Bogie wheel, dia. ...	2 ft. 4½ in.
Total wheelbase, engine ...	31 ft. 0 in.
Heating surface:—	
Boiler and flue tubes ...	866 sq. ft.
Firebox and arch tubes ...	106.5 sq. ft.
Total evaporative ...	972.5 sq. ft.
Superheater ...	218 sq. ft.
Total ...	1,190.5 sq. ft.
Grate area ...	24 sq. ft.
Boiler pressure ...	180 lb. per sq. in.
Tractive effort at 85 per cent. boiler pressure ...	16,640 lb.
Water capacity ...	1,195 gal.
Coal capacity ...	3 tons
Weight in working order ...	63.1 tons
Adhesive weight ...	32.78 tons
Factor ...	4.412

## Proposed Increase in Freight Charges

*Hearing by the Transport Tribunal of the application by the British Transport Commission for an increase in railway freight and dock charges*

On January 4, the Transport Tribunal, sitting as a Consultation Commission as required under the procedure laid down in the Transport Act, 1947, began its public hearing of the application by the British Transport Commission for an increase in railway rates and charges for merchandise by goods and passenger train, and in dock and canal charges, details of which were given in our issue of December 2, 1949. The Tribunal consists of Sir William Bruce Thomas, K.C., Mr. H. E. Parkes, and Mr. A. E. Sewell.

Among the 28 bodies represented by counsel are the British Electricity Authority, the National Coal Board, the Gas Council, the National Farmers' Union, the British Iron & Steel Federation, and the Federation of British Industries.

A statement of the case for the British Transport Commission, supported by figures for the past two years and a 1950 estimate, expressed the view that an exact balancing each year would not be feasible, but that it was sufficient if revenue was balanced taking one year with another, and, since it was a non-profit-making body, deficits or surpluses of any particular year were carried forward to the next.

In 1948, its first operating year, the Commission had a loss of about £4,750,000, but it did not regard the position then as serious enough to warrant earlier application for increases. The position was not satisfactory, however, and in 1949 it became worse. A revenue deficit in excess of £20,000,000 was expected and there were no signs of improvement for 1950.

The indications, indeed, pointed the other way, and the figure for 1950 was likely to be some £30,000,000. It followed that unless immediate action was taken to correct the revenue position there would be an accumulated deficit of between £50 million and £60 million by the end of 1950. The present unbalance in revenue was primarily due to the fact that cost levels had increased to a much greater extent than the levels of rates and charges. Railway charges, which still formed the bulk of the gross revenue, were in general only 55 per cent. over pre-war, whereas costs were more than double.

The Commission had already taken, and would continue to take, all measures that were practicable and reasonable in the direction of securing proper economy. If adequate services were to be provided, however, there were limits to the extent to which this policy could be pursued, and for the most part the current levels of costs were outside its control. Major economies could be secured only by radical changes in working conditions or as a result of fundamental alterations in the technical organisation of transport. Meanwhile the economies and improvements which could be secured would hardly be large enough to offset the further increases in costs over and above the existing level which must be expected.

### Main Cause of the Deficit

The main cause of the deficit which faced the B.T.C. in 1950 arose with the preponderating factor of British Railways. If it were not for the contributions from elsewhere, indeed, the B.T.C. would be faced with the need to raise some £39,000,000 of additional revenue from railways, inland waterways, and docks,

instead of the £28,000,000 which it was proposing.

The statement continued: "It is intended shortly to deal, as part of the pending submission of an interim charges scheme to the Transport Tribunal, with all passenger fares, road and rail, in the London area. Adjustment of charges could not be immediately effective, however, and London Transport must be ruled out as an emergency source of further revenue."

There were only two sources from which the B.T.C. could effectively obtain further revenue, namely, railways, and docks, harbours, and wharves. In a full year, the aggregate yield of the proposed additional charges was estimated at £27,000,000 from the railways, £100,000 from inland waterways, and £900,000 from docks, harbours, and wharves. After these increases, railway freight charges would represent no more than an increase of 81 per cent. over pre-war, which would still be lower than the general rise in cost levels.

The increase asked for represented the bare minimum needed to prevent finances from deteriorating further and was restricted in this way only because the Commission felt that an interim application of this emergency character ought to be restricted. Ultimately it would be necessary to find means of amortising the deficiency already accrued and of providing for other financial requirements.

A further statement analysing railway receipts said that with passenger fares it was expected that there would be a further reduction in the marginal spending power of the public in 1950. This was likely to affect all rail passenger travel, and the conclusion reached was that any further general increase in passenger fares would not result in improved receipts.

### The Case for the B.T.C.

Mr. Lionel Heald, K.C., for the B.T.C., pointed out that the charging powers now in force were from the pre-nationalisation period, and it was those powers the Commission was seeking to increase. The Act provided for a reconsideration of the whole system of charges, and that involved the preparation of complicated schemes which might be, and probably would be, subject to long discussion, and might lead to lengthy inquiries, with the result that it might be a considerable time before a new system could work. In fact, the Minister of Transport had exercised his power to postpone the time within which the Commission must submit such schemes, to 1951.

The overriding consideration here was that there was an adverse financial position which was becoming worse at the rate of something like £500,000 a week. They wanted to deal with this growing deficiency this year, not next year.

Some people appeared to believe that because the railways were nationalised there was some bottomless purse in the Treasury or the Bank of England which could be drawn on to make good any loss. Formerly, the shareholders of the railway companies were the people who absorbed the losses in bad times, while the ordinary and sometimes the preference shareholders had to go without dividend unless something was brought from the general reserves.

There were now no equity shareholders to carry the burden in this case, and no

reserve at all as yet, but there were a number of people who owned transport stock who held investments and were entitled to a return of 3 per cent. That was not a large return. In fact, it was nearly £13 million less than the figure during the war, but they were entitled to that money, and, indeed, it was guaranteed by the Treasury.

The Chairman here asked how the Commission would meet interest on stock if unable to secure the increased revenue.

Mr. Heald: "We can raise the funds such as they are. We can take the money out of the special reserve for extra maintenance which everyone says is so badly needed."

Passenger receipts, said Mr. Heald, were £13 million below what it was hoped they would be. In 1949, it appeared that they were at least £9 million down, and in 1950 they could only say there would be another drop of £7 million, i.e., a £29 million drop in three years. Cheap fares merely helped to the extent that trains were kept occupied; they could not improve revenue.

### Decline in Purchasing Power

The explanation appeared to be that there was, first, falling off of Government traffic from the immediate post-war peak. Total Government traffic, including freight traffic, had fallen off to the extent of £25 or £26 million since the Commission had taken over. Another unexpected factor in the last year or so was the definite decline in the marginal purchasing power, which caused the public to travel less.

With devaluation, although there might be more money actually spent, there would be some increase in the cost of living, with the result that the general public would travel still less in 1950 and general increase in passenger fares at the present time would only make matters worse.

Mr. Heald then dealt with a suggestion by an objector that the expenditure was extravagant and that great savings could be made, saying that as a result of integrating road and rail transport there would be great economies. That, however, could not be realised for a long time.

Mr. Heald said there would be another allegation that there had been an increase of 60,000 men and that the existing traffic did not justify that increase. It was difficult to check such figures, but, assuming that there was an increase in manpower of that nature, this applied only to 1948, not to 1949. If it was something less than 10 per cent., that was generally accounted for by shorter working hours and increased holidays, and there was also an overall increase in traffic of about 4 per cent. since pre-war days. He did not think anyone would suggest that the Commission had been extravagant over wages.

Mr. R. H. Wilson, Comptroller of the British Transport Commission, said that although the B.T.C. had an effective monopoly of 99.9 per cent. of railway traffic, it was quite untrue to call it a public monopoly.

Replying to Mr. Heald on the question of railway rates Mr. Wilson said: "We are a public body and are public servants. Our whole object is to get the charges down to the lowest possible level but, so long as charges are being constantly raised against us, it is impossible to keep our own charges at the present level."

### Economies Effected

Mr. Wilson said that there had been important economies in 1949 as opposed to 1948, including staff economies, the closing down of uneconomic lines, econo-



ties in the building of stations and in the working of trains and so on. The major economies and streamlining of the railway system must await the gradual process of the integration of transport.

Replying to the Chairman, Mr. Wilson said there was no question but that devaluation must be considered as an additional cost. There were distinct indications that the passengers had already produced their share and were supplying a larger proportion of revenue than the freight side.

The purpose of the present scheme to adjust road and rail passenger fares in the London area was to smooth out existing anomalies. It was a difficult thing to do, and if approved it would come into effect as soon as possible. He did not expect that would be before October. Any additional yield from this in 1950 would, therefore, be very small.

#### Manpower

Asked by Mr. Heald for his comments on a letter from the Federation of British Industries which suggested that there had been an increase of 60,000 in manpower, Mr. Wilson said that, from about July, 1948, when staff had reached a peak, there had actually been a reduction of something like 26,000 men.

Mr. Wilson was then questioned by Sir Walter Monckton, K.C., appearing for the British Iron & Steel Federation, the National Council of Associated Iron Ore Producers, the Joint Iron Council, and the Council of Iron Foundry Associations.

Mr. Wilson said that the "economies and improvements" referred to in the statement by the B.T.C. would be of the order of £2,000,000 or £3,000,000. Economies were in such directions as coal burning and general organisation which always produced a degree of economy in staff.

When the Tribunal resumed its hearing on January 5 Sir Walter Monckton questioned Mr. Wilson on the staff position of British Railways in relation to tonnage of freight carried.

Mr. Wilson agreed that in 1937 railway staff totalled about 543,000 and that freight-train tonnage carried was 298,000,000. In 1938 the staff totalled 557,000 and the tonnage carried was 266,000,000. In 1948 the staff had risen to 650,000 and the tonnage carried to 276,000,000. During 1948, however, a decision was taken to reduce staff by 26,000 to 624,000.

Sir Walter Monckton suggested that British Railways staff reductions had been carried out more slowly than had been scheduled. He would ask Mr. Wilson to say whether he anticipated that the process of staff reduction which British Railways had started was being carried out from November, 1948, onwards, would continue.

Mr. Wilson: "We will not assume that a further big reduction will be possible. A tremendous reduction of 26,000 is not something you can do every few months."

Sir Walter Monckton: "You do agree that in the industrial world the attempt has been made to achieve a greater efficiency per manpower of not less than 2 per cent. and that 4 per cent. has been suggested?"

Mr. Wilson: "Yes. We are setting ourselves a target and, although this has not been fixed in terms of percentage, the operating position is under examination all the time. After the railways have settled down from the shaking up due to the war and have recovered from the effects of the very large economy of 26,000, I have no doubt there will be an increase in productivity of the order referred to."

Sir Walter Monckton asked Mr. Wilson whether he was saying that he was not

expecting to achieve the 2 per cent. improvement now and Mr. Wilson replied that the railways "were not an expanding business at the moment." He did not think it would be right and proper to put a public service in the present position of the railways on the same basis as industry.

#### Production in Heavy Industries

Turning to the estimates for 1950 Sir Walter Monckton said that in one class of merchandise no increase of revenue was expected and that in another there was an estimated decrease of £600,000.

Mr. Wilson said he could not agree that increased production in the heavy industries would result in greatly increased freight receipts. He agreed, however, that the increased industrial production in 1948 brought a substantial increase of freight revenue compared with the previous year.

Sir Walter Monckton, speaking of the future of British Railways, suggested that, as a result of devaluation and increased prices of goods, people were less inclined to buy goods and were choosing to spend their money in services.

Mr. Wilson disagreed with this. Was it wrong, he asked, that industries which had increased their prices over 100 per cent. should say they were being hardly used when their freight rates were increased?

Sir Walter then mentioned the attempts to check the inflationary spiral of prices and wages and the restraint on wage demands urged by the T.U.C. With these two elements of national policy in mind was it not inopportune to put a further burden on heavy industry?

Mr. Wilson: "Is it not true that what you are really saying is that costs of your industries have gone up so high that you must continue to receive a transport subsidy?"

#### Coal Transport Costs

Mr. Wilson was next cross-examined by Mr. W. J. K. Diplock, K.C., for the National Coal Board, who said that delivery costs were an important part of coal costs, and it was in the interests of the Board to see that costs were kept as low as possible.

When Mr. Diplock suggested that the present proposed increases if granted might run for three years, Mr. Wilson replied: "Not necessarily. We are not saying this is a permanent increase, but that the charges shall be temporarily adjusted as a temporary measure, to keep the whole financial position within control."

Their present feeling was that costs were likely to remain at least at their present level and they had no indication that in 1950 or 1951 there was going to be any vast increase in traffic.

Mr. Diplock questioned Mr. Wilson about an allowance of 4 per cent. made by the B.T.C. for probable loss of traffic as a result of the new charges and suggested that it represented a diversion of traffic.

Mr. Wilson: "We are saying that if this change is made there will be a loss of traffic of the value of £9,900,000. That does not mean, however, that the whole of the traffic will go elsewhere."

Mr. Diplock said that the Coal Board would be suggesting that, insofar as increases in freight charges were necessary, there should be a lesser increase on the coal class, and that a large proportion of the increase should come from the higher classes, primarily merchandise.

Mr. Wilson asked what grounds the N.C.B. would advance for that consideration.

In respect of heavy industries, replied Mr. Diplock, coal was the most important raw material in the country, and transport charges were a high proportion of the price. Any increase in the cost of delivery of coal was reflected in the cost of production of all the heavy industries and in particular of the exporting industries.

Mr. B. Mackenna, for the British Federation of Wholesale Traders, asked whether it was the view of the British Transport Commission that its staff was excessive.

Mr. Wilson, replying, said it was their view that, while the staff was not excessive by normal standards at the present time, there must be room somehow, somewhere, to obtain further economies. The Commission was continuing to submit to examination the results of branch-lines working to see if they were justifying their existence. The economies effected by the closing of small branch lines were not large.

Mr. Wilson said he was satisfied that the rise in prices that might result from the proposed increase would not affect the cost-of-living figures to any substantial extent.

Mr. David Blee, Member of the Railway Executive for Commercial Matters, replying to Mr. J. P. Graham, explained, item by item, the railway estimates for 1950. He said the railways estimated that freight receipts from coal, coke, and patent fuel would be £2,400,000 more this year than last. The forecast by the N.C.B. of production for 1950 was 210,000,000 tons of deep-mined coal and 15,000,000 of open-cast coal. Railways carried about 76 per cent. of the total output of the coal industry.

#### Effect of Increasing Passenger Fares

When the hearing was resumed on Friday, Mr. Blee, after analysing passenger receipts for the last three years, said the inference was irresistible that a point was reached at which the public were not prepared to spend more on travelling. If passenger fares were increased a point was reached when the law of diminishing returns began to apply.

Answering Mr. J. P. Graham, for the B.T.C., Mr. Blee said that in 1938, excluding workmen's fares and season tickets, the average receipt per passenger journey was 1s. 6-47d., and in 1948 it was 4s. 4-81d. The average passenger was paying more in percentage increase than was being paid in respect of freight.

While the average passenger was paying 93 per cent. more than before the war, in the case of freight it would be equally true to say that the 55 per cent. freight increase was not borne by freight to the extent that it was partly off-set by continued exceptional rates. During the war passengers had been deprived of their "exceptional rates" in the form of excursions, but the exceptional rates for freight had continued.

Asked whether he saw any justification for differentiating between the classes of users Mr. Blee said: "There may be justification, but I do not think that an application for an interim increase is an occasion for delving into it. Those are issues bound to be taken carefully into consideration in the development of the future charges schemes."

Mr. Blee, replying to Sir Walter Monckton, said that there were no factors which enabled him to predict a change in the downward trend of passenger railway traffic. But for the tourist traffic, he would have had to extend his graph downwards, but he turned it upwards a little, because they were hopeful that they would enjoy a

share of the benefits of devaluation and the incidence of Holy Year. He thought that an important factor in the coming months would be the constriction of the marginal spending power of the public.

Mr. Heald intervened to say that the Commission had never contemplated making any increase in the price of season tickets and workmen's fares.

Mr. Blee agreed that an increase on season and workmen's tickets similar to that proposed for freight charges would yield in gross receipts over £3,000,000 a year. He hoped the proposed scheme for the adjustment of road and rail passenger fares in the London area would come before the appropriate body "quite shortly." The intention was to have separate schemes for the London Passenger Transport, suburban, and main-line areas.

#### Losses in Coal Traffic

Mr. Diplock, commenting on the British Railways estimates for losses in traffic which would occur if freight rates were increased, said he would bring evidence to show that there would be no loss on coal traffic as a result of the increase.

If it was true that no proportion of the coal class traffic would be lost, would it not follow that the proportion of this total increase which was going to be borne by the coal class traffic, would be something in the neighbourhood of 40 per cent.?

Taking the 1949 tonnage figures, the average increases in the gas industry resulting from the proposed new freight charges would be about 2s. a ton on 16.67 million tons of coal, which in the electricity industry would mean an increase of 1s. 5d. a ton on 24 million tons, and in the iron and steel industry 1s. a ton on an average 17.5 million tons. Was it not right, therefore, that a lesser proportion of this coal increase should not be borne by the coal class traffic?

If one found that there had been an alteration in the relative economy of coal as a class of freight, since 1927, was it a question for the Tribunal as to whether or not that alteration should be recognised in any change?

Mr. Blee: "At the present moment, in my submission, no, because we are not discussing the charges field."

Mr. H. Royston Askew, for the Gas Council, suggested that at the present time the gas industry was using about 17,000,000 tons of rail-borne coal a year. Most of the gas undertakings were able to route and time their demands to suit the railways. Coal did not have a very high intrinsic value, and there were not many claims for losses.

Mr. Askew asked if it was true to say that rail-borne coal traffic was, from the railway point of view, a very attractive traffic, and, therefore, whether it did not deserve some special consideration.

Mr. Blee, while agreeing that it might be possible to make some concessions in future charges schemes, maintained, as before, that now was not the time that any such consideration could be made.

The hearing was adjourned until January 10, when Mr. E. S. Fay, for the British Electricity Authority, said that the B.E.A. was supporting the proposal of the N.C.B. that insofar as increased freight charges were necessary there should be a lesser increase on the coal class traffic and a large increase on certain other classes. The Electricity Authority did not think there would be any loss of traffic in the next two years. Where was this traffic going if it was leaving the railways?

Mr. Blee: "Partly shipwise and partly by road."

Mr. Fay said that there might come a time when it would be more economic to site new generating stations on the coal-field and to transmit the energy over considerable distances by grid instead of siting the station at the load centre and transporting the coal by rail. Was it appreciated that if coal rates became so high as to be a dominating factor there was a danger that that policy might be intro-

duced with a permanent loss of coal traffic to the railways?

Mr. Blee: "I should think there are many other factors involved in addition to the cost of coal transport."

Mr. Blee said that from what he knew of possible B.E.A. developments he thought the trend would be that the railways would lose electricity coal traffic, and, when pressed by Mr. Fay on this,

### BREAKDOWN OF REVENUE

The tables given below, which were submitted by the British Transport Commission as part of its case for higher freight charges, show the breakdown of revenue from various activities in 1948 and

1949, a statement of gross receipts of British Railways for 1948 and estimates for 1949 and 1950, and a statement showing the estimated yield of the proposed increase in charges.

#### BRITISH TRANSPORT COMMISSION Estimated Consolidated Revenue Account, 1949

	1948	1949
	£m.	£m.
<b>WORKING RESULTS OF PRINCIPAL ACTIVITIES</b>		
<b>British Railways:</b>		
Gross receipts	337.3*	324.5
Working expenses (including depreciation or renewals)	311.1*	312.0
Net receipts	26.2	12.5
<b>Railway collection and delivery services, etc.:</b>		
Gross receipts	8.7	8.6
Working expenses (including depreciation or renewals)	12.6	12.2
Net receipts (deficit)	-3.9	-3.6
<b>Docks, harbours, and wharves:</b>		
Gross receipts	10.8	11.2
Working expenses (including depreciation or renewals)	12.1	12.2
Net receipts (deficit)	-1.3	-1.0
<b>Inland Waterways (including carrying):</b>		
Gross receipts	2.2	2.4
Working expenses (including depreciation or renewals)	2.5	2.8
Net receipts (deficit)	-0.3	-0.4
<b>Other principal activities:</b>		
Gross receipts	132.7	153.4
Working expenses (including depreciation or renewals)	114.9	136.9
Net receipts	17.8	16.5
<b>Total:</b>		
Gross receipts	491.7	500.1
Working expenses (including depreciation or renewals)	453.2	476.1
Net receipts	38.5	24.0
Deduct: Pre-acquisition profits and earnings of subsidiary companies applicable to interests of third parties	2.4	—
	36.1	24.0
<b>OTHER INCOME</b>		
Income from non-controlled undertakings, rents, interest, etc.	9.1	6.9
	45.2	30.9
<b>ADMINISTRATION, INTEREST, AND OTHER CHARGES</b>		
Central administration expenses, including expenses of management of British Transport Stock and Parliamentary expenses	0.7	3.0
Interest on British Transport Stock and other interest charges	42.3	43.5
Payments or transfers to Freight Rebates Funds	3.9	2.7
Provision for taxation	Nil	Nil
Capital redemption	2.5	2.6
Special items	0.5	0.8
	49.9	51.6
<b>Estimated deficit</b>	<b>4.7</b>	<b>20.7</b>
	say	£21

\* In making comparisons with 1949 British Railways gross receipts and working expenses for 1948 should both be decreased by £1.2 million owing to the cessation of charges on the carriage of railway stores.

#### GROSS RECEIPTS OF B.R. FOR 1948 AND ESTIMATES FOR 1949 AND 1950

	1948 as per B.T.C. a.c.	1949 (est.)	1950 (est.)
	£m.	£m.	£m.
<b>Passengers:</b>			
Ordinary	104.0	95.9	88.8
Season tickets	12.1	11.7	11.6
Workmen	6.5	6.2	6.2
<b>Total passengers</b>	<b>122.6</b>	<b>113.8</b>	<b>106.6</b>
<b>Parcels and other merchandise by passenger train:</b>			
Mails	2.9	2.9	3.0
Parcels post	4.1	4.0	4.1
<b>Total passr. train traffic</b>	<b>152.0</b>	<b>142.6</b>	<b>135.8</b>
<b>Freight train traffic:</b>			
Merchandise	83.8	79.5	79.5
Minerals and merchandise	29.3	29.6	29.0
Coal, coke, and patent fuel	67.2	67.6	70.0
Livestock	1.4	1.5	1.5
<b>Total freight train traffic</b>	<b>181.7</b>	<b>178.2</b>	<b>180.0</b>
<b>Total railway traffic receipts</b>	<b>333.7</b>	<b>320.9</b>	<b>315.8</b>
Miscellaneous	3.6	3.7	3.7
<b>Total railway passenger and freight services</b>	<b>337.3*</b>	<b>324.5</b>	<b>319.5</b>
<b>Railway collection and delivery of parcels and goods</b>			
Road haulage (general)	8.4	8.3	8.3
	0.3	0.3	0.3
<b>Total</b>	<b>8.7</b>	<b>8.6</b>	<b>8.6</b>

\* Includes £1.2 million in respect of carriage on coal and other railway stores not charged in 1949

#### ESTIMATED YIELD OF PROPOSED INCREASE

	Est. receipts before increase	Est. yield of increase
	£m.	£m.
<b>Passenger train traffic:</b>		
Parcels and other merchandise	22.1	3.7
<b>Freight train traffic:</b>		
Merchandise	79.5	13.3
Minerals and merchandise	29.0	4.8
Coal, coke, and patent fuel	70.0	11.7
Livestock	1.5	0.2
<b>Total freight train traffic</b>	<b>180.0</b>	<b>30.0</b>
<b>Railway collection and delivery of parcels and goods</b>	<b>8.3</b>	<b>1.4</b>
Smalls "bonus" (including cartage "bonus")	—	1.1
<b>Total</b>	<b>210.4</b>	<b>36.2</b>
<b>Allowance for probable loss of traffic at, say, 4 per cent. of estimated receipts at new level of charges</b>		
	—	9.9
<b>Estimated yield after allowing for probable loss of traffic</b>	<b>—</b>	<b>26.3</b>

said: "You have among your projects the construction of a new power station at Doncaster, and it is likely that coal will be brought to it in very large quantities by road and by canal."

Mr. W. Barr, Secretary of the Hull Incorporated Chamber of Commerce & Shipping, said that, looking at the problem through business spectacles, had Mr. Blee considered the possibility of reduction, with a view to attracting a greater volume of traffic, as opposed to putting the charges up, with the inevitable result that they lose some of it?

Mr. Blee, replying, said that it had been in their minds for the past two years. During the whole of 1948 and 1949 they had done everything which he thought a business man would have done to make both freight and passenger services more attractive. They had gone out to "sell" the railways, even though it was plainly evident that it would be necessary to increase the charges. They hoped that the commercial drive might have created a better result, but, in fact, it did not.

The Committee then adjourned until Wednesday, when objections to the proposed increased charges were stated by Mr. R. M. Shone, Director & Secretary of the British Iron & Steel Federation.

## Rebuilding the Vestfold Line, Norway

The standard gauge in Norway was increased last October from 4.164 km. to 4.274 km., when the work of the rebuilding of the Vestfold section from 3 ft. 6 in. gauge to standard gauge was completed. This section of the Norwegian State Railways runs from Drammen along the western shores of the Oslo fjord, connecting Drammen, an important railway centre, with Tönsberg, Sandefjord, and Larvik, all important commercial centres



Map of the Vestfold and other sections of the Norwegian State Railways

and home bases for the Norwegian whaling fleet.

The Vestfold Railway was opened in 1881. The rebuilding to standard gauge began in 1934. The manpower employed on this work has been relatively small, particularly during the occupation, when the work almost ceased. Simultaneously with the rebuilding the old 25-kg. rails have been replaced by 35-kg. rails—altogether, 11,000 tons of rails for the 110-km. distance.

The 220,000 sleepers have been replaced

by new ones and 150 bridges have been rebuilt. Several stations have been improved or rebuilt, and the line is now ready for electrification, although the plans for this have not yet been approved by the Government.

The old rolling stock, consisting of 23 locomotives, seven motor coaches, 70 bogie coaches, and approximately 500 goods wagons, cannot be used in Norway, where now only one short narrow-gauge line remains, the 58-km. Setesdal Railway.

## The Pullman Car Co. Ltd.

Seven new "Golden Arrow" cars by 1951

The annual general meeting of the Pullman Car Co. Ltd., whose accounts were referred to in an editorial note in our issue of December 16, 1949, was held in London on December 30, when Mr. Stanley J. Adams, Chairman & Managing Director, said that he was glad to report yet another successful year.

Pullman services, said Mr. Adams, had proved more popular than ever, and the number of passengers carried in Pullman cars amounted to over 1,500,000. They estimated that they had carried upward of 1,000,000 passengers in their non-supplemental cars. They had had to bear, however, heavy increases in expenses, notably under the heading of wages, amounting to £43,025.

During the year they had confirmed the order for seven new Pullman cars, and these, with other cars being rebuilt at their works, would constitute a new "Golden Arrow" train which would be ready in 1951, the "Festival of Britain" year.

The cost of the new cars would have been inordinately high, but, thanks to certain pre-war purchase of material, together with work executed on these materials, the cost now would be considerably lower.

To avoid the high prices which existed today for rolling stock, the skill and ingenuity of their engineer and staff had been called on to maintain the fleet at the highest degree of efficiency, and they had thought it wise to exceed the theoretical amount considered necessary for the ordinary maintenance of the cars. These amounts had been written off in the year in which the work had been done.

### Improved Car Layout

They had recently tried out a new form of decoration in a reconditioned car. The general layout and treatment of design had met with universal approval. Aluminium was a special feature in the reconstruction and decoration. The car on its first trip was used by the King on a visit to Portsmouth and the car was now in daily operation in the "Golden Arrow."

They hoped to renovate other cars in varying designs and thereby acquire a knowledge of what the public like, and it was their intention to feature as far as possible aluminium both in the decoration and the construction of this new train.

So that shareholders should be aware of all the circumstances the directors obtained a valuation of the rolling stock in 1946 in the light of values prevailing at that time. This revaluation of cars and equipment amounted to £928,129.

Ordinary shareholders had been without a dividend since the reconstruction of the company in 1938. Just when conditions were on the point of improving, war broke

out, services being then almost wholly suspended. Since the reorganisation of their capital in 1938 the company had paid or provided in direct taxes, excluding purchase tax, £245,000.

Their relations with British Railways continued on the same happy and cordial basis as heretofore. The Pullman Car Company did all in its power to support the interests of British Railways by giving a service to the public of which there was abundant evidence of its popularity. For the current year, traffic and profits were slightly down, but the situation was being resolutely dealt with.

The satisfactory results were in no small measure due to the loyalty and efficiency of the executives and staff and employees generally.

## Staff & Labour Matters

### T.U.C. Wages Policy

Members of the T.U.C. special economic committee on January 5 discussed the Government wages policy with the Chancellor of the Exchequer.

Regarding the claim for salary increases of the Association of First Division Civil Servants, unions affiliated to the T.U.C. are watching closely to see if the Government is prepared to take a firm line by declining the claim in accordance with the T.U.C. policy on wages restraint.

The T.U.C. attitude is that wages restraint should apply to all, except, perhaps, the lower-paid employee. The Post Office engineers agreed on January 7 to refer their rejected wages claim to arbitration, and boot and shoe operatives have decided not to suspend their sliding-scale agreements.

The N.U.R. claim for a £5 a week minimum wage will be considered by the Railway Staff Conference on January 24.

**LOAN FOR ITALIAN STATE RAILWAYS.**—According to a proposal submitted by Signor Corbellini, Italian Minister of Transport, to a recent Council of Ministers, the Italian State Railways were authorised to obtain a loan of lire 25,000 million, approximately £14,100,000, from the semi State-owned "Consorzio di Credito per le Opere Pubbliche" (Consorzio di credits for public works). It is intended to finance the further development of the railways, including a number of electrifications, the construction and reconstruction of station buildings, and the modernisation of signalling and other plant.



## Questions in Parliament

### Compensation for Loss of Office

Mr. R. De la Bere (Evesham—C.) on December 15 asked the Minister of Transport whether the preparation of the regulations under section 101(1) of the Transport Act, 1947, requiring the Commission to pay compensation to officers in certain cases, where they suffered loss of employment or loss or diminution of emoluments or pension rights, or where their position was worsened, had now been completed.

Mr. James Callaghan (Parliamentary Secretary, Ministry of Transport) in a written answer stated: No, Sir. The Minister of Transport hopes to lay the regulations for the road haulage industry before the House when it re-assembles after the Christmas recess. The other regulations, to which the Minister referred in his answer to Mr. De la Bere on October 24, are still in preparation.

### Directions to B.T.C.

Mr. David Renton (Huntingdon—Lib. Nat.) on December 15 asked the Minister of Transport in how many cases had directions of a general character as to the integration and co-ordination of transport, or as to the financial policy of the British Transport Commission, been given by him to the Commission since December 1, 1948, in accordance with section 4 of the Transport Act, 1947.

Mr. Alfred Barnes in a written answer stated: None, Sir.

## Notes and News

**Peking-Hankow Railway Reopening.**—An agency message from Peking states that traffic is to be resumed along the whole of the 1,220-km. Peking-Hankow Railway for the first time in 13 years. Traffic was resumed on the Canton-Hankow railway on December 28.

### Double-Deck Train Returned to Service.

—The Southern Region double-deck electric train set, described in our November 4 issue, which was withdrawn for the second time on November 22 as the result of wheel trouble, was returned to service on January 6. It is now working regularly between Charing Cross and Cannon Street and Dartford.

**Sugar Loaf Tunnel Reopened.**—The Sugar Loaf Tunnel between Cyngordy and Llanwrttyd Wells, on the Swansea Victoria and Shrewsbury line, was reopened on January 9. The tunnel, 1,000 yd. long, had been closed to passenger train services since November 17 after the working loose of keystones. When the tunnel was closed passenger trains between Llandovery and Llanwrttyd Wells were replaced by buses.

**Sir William Slim Opens Lincoln Iron Foundry.**—The new mechanised iron foundry of Ruston & Hornsby Limited, Lincoln, built in three years at a cost of £500,000, was opened on January 5 by Field-Marshal Sir William Slim, Chief of the Imperial General Staff. Recalling that he was employed in a steel works 40 years ago, Sir William Slim said that he still kept his interest in steel works and iron foundries and the longer he served the more he realised that a sound national defence must be based on an efficient and a contented industrial system. The new foundry will increase the casting capacity of the firm by 250 tons a week and its labour

strength by 300. Further reference to the Ruston & Hornsby works is made in an editorial note this week.

**Institution of Civil Engineers.**—At a meeting of the Institution of Civil Engineers, Great George Street, London, S.W.1, to be held on January 24, at 5.30 p.m., there will be a film entitled "Flooding in South-East Scotland—repair work for restoration of railway traffic," with a commentary by Mr. J. S. Robertson.

**Railway Students' Association.**—On January 25, a paper on "Canada and its Railways" will be delivered to the Railway Students' Association, by Mr. J. B. Thom, European Manager, Canadian National Railways. The meeting will be held at the London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2, at 6 p.m.

**British Railways, Southern Region, Lecture & Debating Society.**—Mr. E. V. Brady, New Works Engineer, Southern Region, will read a paper entitled "An Engineering Story" before British Railways, Southern Region, Lecture & Debating Society, on January 25. The meeting will be held at the Chapter House, London Bridge, at 5.45 p.m.

**Damage to Costa Rica Railway.**—The Costa Rica Railway Company announces that excessive rain and flooding has caused extensive damage to bridges and lines. Through traffic from Limon to Guapiles has been resumed, but traffic to San Juan over temporary structures is not expected until toward the end of January. Repairs and permanent replacements will take many months and are likely to be costly.

**B.S.A. Tools Manchester Office.**—Because of the growth of its activities the Manchester office of the B.S.A. Tools group has moved from 274, Deansgate, Manchester, to new premises adjoining the Daimler and Lanchester showrooms, Daimler House, Wilmslow Road, Manchester, 14, telephone, Rusholme 2333-4. The new premises include a showroom equipped for demonstration purposes and accommodation for stocking machine and small tool products.

**London Midland Region Music Hall.**—Another music hall show will be put on by the London Midland Region at St. Pancras Town Hall on January 20, when Mr. Turner Layton will be the guest artist; the proceeds will go to the Railwaymen's Orphanage, Derby. There will be twelve turns given by railwaymen and women, and among them will be Mr. Albert Warby, of Camden, who is an accomplished magician, as well as a number of comics, singers, instrumentalists, and acrobatic dancers.

**Taital Railway Company Report.**—The report of the Taital Railway Co., Ltd., Chile, for the year ended June 30, 1949, shows that working receipts were £111,609, against £97,792 for the previous twelve months, and expenses £146,979, against £114,661, resulting in a loss of £35,370, compared with £16,869. After deduction of income from investments, and adjustments for income tax and other charges, the net loss was £29,236, which, with the debit balance from last year, made a debit balance to be carried forward of £95,083. The improvement in receipts was due to the 20 per cent. tariff increase of November, 1948, but hopes of more traffic after the re-opening of Oficina Chile had been offset by failure, due to lack of ship-

ping, to carry the increased nitrate production. Working expenses had risen as a result of higher costs and wages, for which latter the tariff increase had been designed, but had proved quite inadequate. The situation was grave. The railway was complementary to the nitrate industry in the region which it served, and should be enabled to carry on protected against loss, with an assurance of a reasonable return on capital.

**Railway Benevolent Institution.**—At its meeting on December 20 the board of the Railway Benevolent Institution granted annuities to seven widows and nine members, amounting to £280 2s. per annum; and authorised 32 grants amounting to £407 10s. from the special benevolent fund in cases of immediate necessity, and one grant to a child, of £20. Grants made from the casualty fund during the month of November amounted to £543.

**Goods and Passenger Consignments Missing or Damaged.**—During 1949 there were 78,125 fewer goods and passenger consignments lost, stolen, or damaged on the London Midland Region than in the previous year. The Commercial Superintendent, in a message to the staff thanking them for their work, said it had saved over £500,000, emphasised the efforts being made to give greater satisfaction to railway customers, and had assisted the national effort.

**Liège Fair.**—The annual Liège International Fair, covering mining, metallurgy, and electrical and mechanical engineering, will be held this year from April 29 to May 14. Exhibits will include a large variety of electrical control gear and apparatus for the thermic treatment of metals, new alloys, and improved machine tools. The scale and scope of the fair are intended to exceed those of 1949. Particulars may be obtained from 32, Boulevard de la Sauvenière, Liège.

### Half-a-Million People See L.M.R. Films.

—So popular have been the new 16-mm. colour sound films introduced by the London Midland Region of British Railways at the beginning of 1949 that during the year they have been shown to 3,400 audiences of nearly 500,000 people. The films, which deal with holiday resorts, railways, and important industries, are loaned free of charge to schools, clubs, and promoters of local social enterprises. If desired the L.M.R. will supply the operator and the projector.

### John Summers Steel Output Record.

With an ingot output of 491,760 tons during 1949 the firm of John Summers & Sons Ltd. has broken all production records at Shotton steel works. In processing this tonnage, the slab mill, hot strip mill, cold strip mills, and finishing departments have broken all previous records, making possible deliveries of steel sheets and plates to the total of 432,117 tons, some 30,000 tons better than the previous record. This record tonnage has materially assisted the export drive.

### Docks Executive Visits the Port of London.

—The Chairman, Sir Reginald Hill, together with other Members of the Docks & Inland Waterways Executive, visited the Port of London on January 11 and 12, and further visits are being made today and on January 25 and 27, to consult with the harbour authorities and representatives of other interests concerned. The visits form part of a series to

## OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

**ENGINEERING OFFICE** having good connections with purchasing offices, consulting engineers and overseas Governments in London, desires further representations of first class manufacturers of railway specialities.—Box 588, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

port areas being made by the Executive in pursuance of Section 66 of the Transport Act, 1947, which provides for the preparation by the B.T.C. in consultation with the parties concerned of schemes for the development, maintenance, and management of trade harbours.

**Scrap Metal Recovery in 1949.**—During 1949 the Eastern and North Eastern Regions, British Railways, were able to recover 190,818 tons of iron and steel scrap and 4,292 tons of non-ferrous metal scrap valued at £1,344,450. Miscellaneous scrap was recovered to the value of £275,677.

**United States Trains Cut.**—Because of dwindling coal supplies due to strikes, the United States Inter-State Commerce Commission ordered a one-third reduction, from midnight on January 8 in passenger services on all railways using coal fuel. The order applies to lines having 25 days' supply of coal or less for passenger services.

**Road Accidents in October, 1949.**—The return issued by the Ministry of Transport of the number of persons reported to have died, or to have been injured, as a result of road accidents in Great Britain, during the month of October last shows 380 deaths (compared with 403 in October, 1948), 3,738 seriously injured (compared with 3,014 in October, 1948), and 11,514 slightly injured (compared with 10,573).

**Charles Roberts: Interim Dividend.**—The directors of Charles Roberts & Co. Ltd. have declared an interim ordinary dividend of 7½ per cent. on account of the year ending March 31, 1950, against 6 per cent. last year. This increased interim, they state, is not to be taken as an indication of any increase in the total amount likely to be distributed for the year, but they have considered it advisable to adjust the ratio between the interim and final dividend. The final dividend last year was 24 per cent. and a 50 per cent. share bonus ranking for the current interim was distributed last month.

**More Trains and Reduced Fares on a Sunderland Branch.**—As from January 2, fares were cut by a third and trains increased from three a day to an hourly service to and from Sunderland for the benefit of the 37,200 inhabitants of Hetton, Murton, Seaton, and Ryhope. With a service of 14 trains a day, and by reducing the return fare from Hetton to Sunderland from 1s. 11d. to 1s. 2d., it is hoped to revive the railway route on this North Eastern Region branch line. Trains now leave Hetton each weekday at 9.26 a.m. and 26 min. past the hour until 10.26 p.m. The average user of the branch before the new service began was 15 tickets a day, and on the first day, the number of tickets sold in both directions was 316, and on the second day, when the weather was

**REPRESENTATIVE** required, based in London, for the sales staff of a group of companies, in connection with railway rolling stock details. Some technical experience preferable. State qualifications and salary required to Box 584, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**THE RAILWAY SYSTEM OF JAMAICA.** A general description of the system and its traffic, with an account of economic problems, the motive power used, and some features of operation. By H. R. Fox, B.Sc., M.Inst.C.E., General Manager, Jamaica Government Railway. Reprinted from *The Railway Gazette*, January 5 and 12, 1945. Price 1s. Post free 1s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

bad, 126. Last Saturday, when the third-round F.A. cup match between Sunderland and Huddersfield was played at Sunderland, 712 tickets were sold, compared with an average of 37 normal Saturday.

**Institution of Locomotive Engineers: Annual Luncheon.**—The annual luncheon of the Institution of Locomotive Engineers will be held at the Dorchester Hotel, Park Lane, London, W.1, on March 17.

**Steel Companies' Record Output.**—Last year the United Steel Companies made 2,064,200 tons of steel ingots, besides 1,135,551 tons of pig-iron and ferro-alloys. This beats the record output set up in 1948 by 86,000 tons. All branches exceeded the targets set in the output programme. Steel output by Colvilles Limited at 1,855,000 ingot tons was also the highest ever. With the progress being made in extensions at the Clydebridge works, the company foresees no difficulty in maintaining these figures in 1950 provided market conditions and raw material supplies continue as at present.

**Proposed Sale of Bolivar Railway.**—Stockholders in the Bolivar Railway Company are asked to give their directors discretion and power to conclude a sale of its properties to the Government of Venezuela. Negotiations for a possible sale have recently been renewed and are still in progress. Terms are not stated, but power to settle for which the directors ask is only operative provided that the net amount available for disposal, after settlement of claims and expenses be not less than £615,000. The claims and expenses, which include cost of negotiating the sale, agents' commissions, and so on, as well as £13,500 compensation to the staff, will amount in all to about 22 per cent. of the sale price.

**Special Trains Carrying Bungalows for Australia.**—Wooden bungalows, including interior and exterior fittings, for Australia are now being sent by a special L.M.R. train weekly from the works of W. J. Simms, Sons & Cooke Ltd., Stapleford and Sandiacre, to Liverpool for shipment. Each house weighs between 10 and 12 tons and each train hauls between 24 and 32 houses. Altogether, some 1,750 houses will be sent, and it is anticipated that the whole of the contract will be completed within 18 months. Special arrangements have been made by the London Midland Region for the cartage of the houses from the works and for loading them into the wagons.

**Hale & Hale (Tipton) Limited.**—The annual general meeting of the company was held on December 7, Mr. W. Edgar Hale, Chairman, presiding. Mr. Hale said that the Blackheart malleable-iron castings made by the parent company were absorbed by almost every branch of engineering in Britain, and that probably 90 per cent. of the production was intended for export in its finished state. This year,

**WANTED:** Good Secondhand Turntables, standard gauge, suitable for ordinary 20-ton wagons.—Reply Box 586, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**THE RAILWAY HANDBOOK** provides the railway student with a collection of useful statistics and information relating to the railways of Great Britain and Ireland. In addition, in matters of international interest, such as speed and electrification progress, the book extends its scope to cover the whole world in order to present a complete picture of these increasingly-important developments. 120 pp. Dy. 8vo. Paper covers Price 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

their production and sales had been a record, though they still could not meet the increasing demands. Both subsidiaries, Chatwins Limited, manufacturers of Sunbeam solid-fuel appliances, and J. & J. Whitehouse (Tipton) Limited, makers of cast-iron hollowware, showed satisfactory results.

**Brown, Bayley's Steel Works Limited.**—The Chairman of Brown, Bayley's Steel Works Limited, Sheffield, whose annual meeting was referred to briefly in our December 30 issue, is Mr. John W. Garton not Mr. E. H. Armitage as was stated. Mr. S. Guy Newton and Mr. H. Bull are the Joint Managing Directors of the firm.

**Proposal to Keep Open the Belfast & County Down Railway.**—Members of the Northern Ireland Parliament have received a letter from the Down County Council suggesting that the former Belfast & County Down Railway should be kept open and subsidised as necessary out of the public funds. It is also suggested that pending investigation by Parliament of the whole structure and future of the railways of Northern Ireland all systems should be subsidised by Parliament for a period.

**Strike of Gold Coast Railwaymen.**—The union has decided not to take part in the strike of locomotive drivers and firemen which began at Accra, Gold Coast, on January 7, in obedience to the call for a general strike by the local Trades Union Congress. The Gold Coast Government, which has declared the strike illegal, warned the striking railwaymen that they would be liable to penalties. The main line affected by the stoppage, which so far is only partial, is that between Accra and Kumasi. The Government is maintaining essential communications.

**Carriage of Workmen in Unlicensed Public Service Vehicles.**—The Minister of Transport has made an Order revoking certain Orders made in 1945 to meet the exceptional conditions which existed then and continued for some years afterwards. These Orders allowed workmen to be carried to and from bombed sites and prisoners-of-war to be carried to and from their work in unlicensed public service vehicles driven by persons not licensed to drive such vehicles. Normal transport facilities are now considered sufficient to meet the needs of any workmen engaged on bombed building sites, and accordingly the Orders made in 1945 are no longer needed. The Order, entitled the Emergency Powers (Defence) Road Vehicles & Drivers (Revocation) Order, 1950, comes into operation on January 18.

**Diesel Locomotive Shop at Montreal.**—The first diesel locomotive shop in Canada, fully equipped for assembly-line production of diesel-electric locomotives, was opened for inspection at the Montreal Locomotive Works on December 21, 1949. Three companies, Canadian General Electric, Dominion Engineering, and Montreal

Locomotive Works, have spent more than \$15,000,000 on the shop, which eventually, it is hoped, will supply the railways with all-Canadian-built locomotives. Under full production on a regular basis, the new shop can turn out one locomotive each working day. The Canadian General Electric Company builds the generators, traction motors and other electrical parts at its Peterborough, Ontario, plant. Dominion Engineering Works, Lachine, has for some time been producing 1,000-h.p. diesel engines and now has the new 1,500-h.p. diesels under construction. Montreal Locomotive Works makes the chassis, trucks, cabs and other parts and then assembles the components into complete locomotives.

### Forthcoming Meetings

- January 13 (Fri.).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. Discussion: "The Use of Mild Steel for Service at Sub-Zero Temperatures," by Messrs. F. H. Keating and E. V. Mathias.
- January 16 (Mon.).—Institute of Transport, at the Jarvis Hall (R.I.B.A.), 66, Portland Place, London, W.1, at 5.45 p.m. "Factors Affecting the Turn-Round of Ships at British Ports," by Mr. R. J. Hodges.
- January 16 (Mon.).—Institute of Transport, Scottish Section, at the North British Station Hotel, Edinburgh, at 5.30 for 6 p.m. "Railway Education," by Mr. H. F. Sanderson.
- January 17 (Tue.).—Institute of Fuel, at the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. "Downjet Coke Firing for Small Steam Generators," by Messrs. F. B. Karthaus and G. C. Sharpe; "The Burning of Coke by the Downjet Method," by Messrs. F. F. Ross and G. C. Sharpe; "The Coke-Fired Downjet Furnace in Industry," by Mr. G. C. Sharpe.
- January 18 (Wed.).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 6 p.m. "Improvements in Track Circuit Shunts (Injector Track Circuit)," by Mr. H. W. Hadaway.
- January 18 (Wed.).—Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. "Roller Bearings—Their Contribution to Modern Rolling Stock Design," by Mr. W. T. Thompson.
- January 19 (Thu.).—Diesel Engine Users Association, at Caxton Hall, Westminster, London, S.W.1, at 2.30 p.m. "Fuel Injection in Modern Oil Engines," by Mr. W. A. Green.
- January 19 (Thu.).—British Railways, Western Region, London Lecture & Debating Society, in the Clerks' Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. "Railways and the Public," by Mr. Norman Crump, City Editor, *Sunday Times*.
- January 19 (Thu.).—Institute of Traffic Administration, Southampton Centre, at the Chamber of Commerce, Southampton, at 7 p.m. "Co-ordination of Travel from the Port of Southampton."
- January 19 (Thu.).—Institute of Transport, Northampton Group, at the Technical College, Northampton, at 7 p.m. Discussion: "Road and Rail Co-ordination Under Nationalisation," introduced by Mr. G. F. Stoddart.

### Railway Stock Market

Earlier in the week buyers were holding off pending news of the general election. British funds fell sharply owing to small demand and some selling of long-dated and nationalisation stocks, and industrial shares were mostly lower on balance, taking their cue from Gilt-edged. It is uncertain whether the Government broker will still be prepared to support the Gilt-edged market; but the view is that there will be more official support if prices fall heavily. At the time of going to press, 3½ per cent. War Loan has receded to 91½, 2½ per cent. Consols to 69½ and 3 per cent. Transport (1978-88) has come back to 88.

With the election only a few weeks off, big institutional buyers of British Funds may be prepared to wait until after the election; meanwhile prices could fall heavily unless there were evidence of renewed support from the Government broker. In the circumstances the trend of markets over the next few weeks may be governed by that in British Funds.

Nevertheless it is still believed by some that industrial shares may rally and attract more attention shortly in the hope of a change of Government. At the moment business is mainly in gold mining, rubber, and other sections not directly affected by politics.

There has, nevertheless, been no revival of activity in foreign rails, attention having been diverted to Japanese, German, and other foreign bonds, which however encountered considerable profit-taking after earlier gains.

La Guaira failed to keep best levels, but was active around 61, while Bolivar "C" debentures were wanted up to 47, the prevailing market view being that stocks of both companies are likely to prove undervalued at current levels, assuming equitable take-over terms. Central Uruguay ordinary sold around 10, Chilean Northern 5 per cent. debentures marked 29, Guayaquil & Quito 5 per cent. first bonds 23, and Paraguay Central "D" debentures sold around 44.

Leopoldina stocks attracted only moderate attention, though the ordinary strengthened to 9½ on the view that pay-out terms may show them to be worth 15.

The preference remained at 26½, but are considered to be worth at least 30. Pay-out terms for both these stocks will turn on whether it is decided that the preference stock should receive full payment for the large dividend arrears outstanding. Leopoldina 4 per cent. debentures were 90, and the 6½ per cent. debentures 126. Leopoldina Terminal 5 per cent. debentures were around 97, with the £1 preference 2s. 6d.

Great Western of Brazil has been more active, but encountered moderate profit-taking, and at 133s. 9d. failed to hold all an earlier improvement.

Antofagasta ordinary and preference have been less active at 7½ and 47½ respectively, while Manila "A" debentures eased to 76 and the 5 per cent. preference to 6s. 9d. Mexican Railway 6 per cent. debentures remained at 52½. Nitrate Rails kept at 76s. 3d. and San Paulo 10s. ordinary were active, but almost unchanged in price at 15s. 3d. There was again a fair amount of business done around 26½ in United of Havana 1906 debentures.

Road transport and bus companies' shares remained firm in expectation that dividends will be maintained and in the hope that the new Government may bring no further acquisitions by the B.T.C. Southdown were firm at 125s., with West Riding 67s. and Lancashire Transport 82s. B.E.T. deferred stock showed minor fluctuations around 480.

Iron and steel shares maintained a firm undertone in the hope that nationalisation may never take place. In general, movements tended to be small, though Firth Brown rallied well to 71s. 3d., Dorman Long were 32s., United Steel 27s. 9d. and Beardmore at 46s. moved higher on balance.

In locomotive building and kindred sections, North British strengthened to 20s. while Vulcans were 18s. 9d., Beyer Peacock 19s. 6d., Wagon Repairs 5s. shares 16s. 4½d. and Hurst Nelson were 58s. 9d. at Glasgow. Gloucester Wagon kept at 50s., but Birmingham Wagon eased to 28s. 9d. North Central Wagon were 12s. 3d., Central Wagon 88s. 9d. and Charles Roberts 87s. 6d.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date	
				Total this year	Inc. or dec. compared with 1947/48		Total	Increase or decrease
							1948/49	
South & Central America	Antofagasta...	811	1.1.50	£ 68,350	£ 6,210	52	£ 9,764	£ 7,990
	Costa Rica ...	281	Sept., 1949	30,929	3,154	13	102,621	8,998
	Dorada ...	70	Nov., 1949	23,909	8,758	48	320,787	14,879
	Inter. Ctl. Amer. ...	794	Oct., 1949	\$579,232	\$376,578	43	\$10,110,125	\$960,633
	La Guaira ...	224	Dec., 1949	\$95,154	\$20,009	52	\$1,262,514	\$11,002
	Nitrate ...	382	31.12.49	20,797	2,523	52	464,768	146,420
	Paraguay Cent. ...	274	30.12.49	£134,628	£634,127	26	£3,735,127	£1,030,031
	Peru Corp. ...	1,050	Nov., 1949	\$6,493,300	\$2,623,001	22	\$27,009,758	\$8,615,128
	“(Bolivia Section)	66	Nov., 1949	Bs.11,211,000	Bs.1,920,270	22	Bs.52,157,164	Bs.8,295,289
	Salvador ...	100	Aug., 1949	c81,000	c1,000	9	c173,000	c2,000
South & Central America	Taltal ...	154	Nov., 1949	15,910	9,120	22	60,980	22,460
	United of Havana ...	1,301	11.6.49	\$231,311	\$14,746	49	\$13,733,928	\$4,659,951
Canada	Canadian National†	23,473	Nov., 1949	14,853,000	84,000	48	151,818,000	3,068,000
	Canadian Pacific†	17,037	Nov. 1949	10,723,000	655,000	48	111,045,000	2,988,000
Various	Barsi Light*	167	Nov., 1949	32,257	9,202	35	388,605	15,450
	Egyptian Delta ...	607	31.10.49	21,874	5,055	31	385,264	12,682
	Gold Coast ...	536	Oct., 1949	217,578	497	32	1,625,728	213,529
	Mid. of W. Australia	277	Oct., 1949	28,391	3,076	18	109,866	3,847
	Nigeria ...	1,900	Oct., 1949	632,907	115,113	30	3,360,709	216,792
	South Africa ...	13,347	10.12.49	1,612,832	139,593	36	54,208,409	5,091,418
	Victoria ...	4,744	Sept., 1949	1,625,367	202,174	13	—	—

\* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at 83 to £1